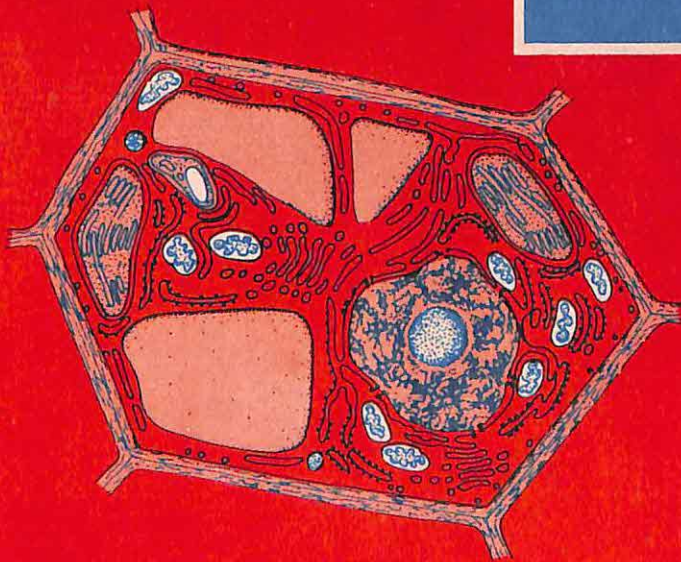
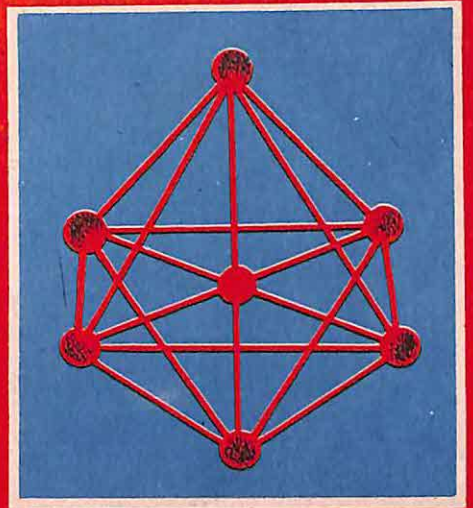
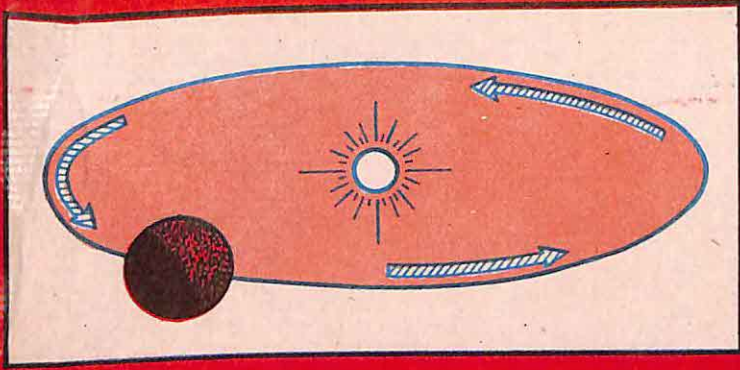


SCIENCE WORKBOOK

VOL. II FOR CLASS X



PITAMBAR PUBLISHING COMPANY

*Based on the latest syllabus prescribed by C.B.S.E. New Delhi
in the subject of Science based on New Education Policy.*

SCIENCE WORKBOOK

VOL. II
FOR CLASS X

2022

By
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PREFACE

This workbook to 'Science' has been written keeping in view the recently introduced integrated approach to the three science subjects, namely Physics, Chemistry and Biology for Class X. The chapters are based on the latest syllabus prescribed by the Central Board of Secondary Education, New Delhi according to New Education Policy.

The workbook is designed not only to afford comprehensive practice of the entire course but also to drill students in examination techniques. It would also help the students to develop the ability of answering questions in a concise and precise manner. The students can thus identify the specific areas in which the understanding is yet to be achieved.

The questions are of thought-provoking type designed to make a pupil think and assimilate the concepts fully. Questions of various types have been included so that students will find it useful for quick revision and practice before their final examination.

I am thankful to Fr. C.J. Alvares, Mrs. S. Sharma, Mrs. Harrison, Mrs. R. Kaur, Mrs. V. Gupta and Mrs. Thomas. Special thanks must go to my Ex-principal Mr. D. Michael who made useful suggestions while the book was being written.

Any constructive suggestions for further improvement of this workbook will be highly appreciated and incorporated in the revised edition.

—K.K. Gupta

A WORD TO THE STUDENTS

Dear Students,

There is no short-cut to success except hard work. If you work hard with self-confidence and determination, you are sure to reach the top. My best wishes are with you.

—K.K. Gupta

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UNIT 1

ENERGY

1. What is energy ?
.....
.....
2. Why did the early civilization develop especially near river valleys ?
.....
.....
.....
3. Name four different forms of energy studied by you.
(a).....(b).....
(c).....(d).....
4. In what ways was the discovery of fire important for the primitive man ?
.....
.....
5. What were the different fuels known to early man ?
(a).....(b).....(c).....(d).....
6. How did the invention of fire improved the man's chances of survival in a hostile environment ?
.....
.....
.....
7. Name four simple machines which are used to do most of the mechanical work.
(a).....(b).....(c).....(d).....

8. Define each of the following terms :

(a) Kinetic energy

.....

.....

(b) Potential energy

.....

.....

9. Write three uses of wind energy.

(a).....(b).....(c).....

10. Mention three uses of water wheels.

(a).....(b).....(c).....

11. In what ways is solar energy better than other sources of energy ?

(a).....

.....

(b).....

.....

12. What was the main limitation of a single sail boat ?

.....

13. Which country is credited for inventing windmill ?.....

14. What is the most important limitation of water and wind energy ?

.....

.....

15. Why did primitive man made most of the factories near a flowing river or a dam ?

.....

.....

16. Name four sources of energy that man had at his disposal around the 17th century.
- (a).....(b).....(c).....(d).....
17. Why did man started discovering new sources of energy by the turn of the 17th century ?
-
-
18. Name the device which transform the heat energy of steam into the mechanical energy of the piston.
-
19. (a) Who invented the first steam pumping engine ?.....
- (b) What was the efficiency of his engine ?
20. (a) What is the contribution of James Watt ?
- (b) In what ways was his engine superior to New Commen ?
-
21. How much heat energy can be converted into the mechanical work by the modern engines ?
-
22. What is an external combustion engine ?
-
-
23. What was the impact of the invention of external combustion engine on man's civilization ?
-
-
-
24. Explain in brief the working of an external combustion engine.
-
-
-

.....
.....
25. What were the main disadvantages with external combustion engine ?

(a).....
.....

(b).....
.....

26. Who invented the internal combustion engine ?

27. What for are Rudolph Diesel and Nikolaus Otto famous ?
.....
.....

28. In what ways is the working of an internal combustion engine different from an external combustion engine ?
.....
.....
.....

29. Draw a neat labelled diagram of an internal combustion engine.

30. Name the five steps involved in the working of an internal combustion engine.

(a).....(b).....(c).....

(d).....(e).....

31. State two advantages of an internal combustion engine.

(a).....

.....

(b).....

.....

32. What is the relationship between work and energy ?

.....

33. Why do work and energy have common units ?

.....

.....

34. Define the term 'Joule' in your own words.

.....

.....

35. How much energy is needed to lift a stone of mass one kilogram through a height of one metre.

.....

36. If an object has the ability to do 200 Joules of work, what would be its energy ?

.....

37. (a) What is power ?

.....

(b) In what unit is it measured ?

38. Define the term 'Power'.

.....

39. What is the relationship between Horse Power and Watt ?

.....

40. How many Watts make one Kilo Watt ?

.....

41. What is the commercial unit of energy ?

.....

42. Prove that one Kilo Watt Hour of energy is equal to 36,00,000 Joules.

.....

.....

43. (a) What do you mean by transformation of energy ?

.....

.....

(b) What is the importance of transformation of energy ?

.....

.....

44. Name the transformations of energy which take place when we hammer a nail into a plank of wood.

.....

45. State the Law of Conservation of Energy.

.....

.....

46. What is the contribution of Benjamin Thompson ?

.....

47. Can heat energy be converted to mechanical energy ? If so give an example.

.....

.....

48. Can you name two processes which use up energy ?

(a).....(b).....

49. Name two processes in which energy is released.

(a).....(b).....

50. An engine supplies 5,000 Joules per minute. What is the power supplied ?

.....
.....

51. An engine is designed to convert 40% of heat energy into work. If the steam in the engine has 20,000 Joules of energy, how high would this engine lift a weight of 1 Kg from the ground ?

.....
.....

52. Find the total Kwh consumed in your house in a month by reading the number of units from your electricity meter, (1 unit = 1 Kwh).

.....

53. One gram of coal when burnt can provide 350 J. How many tonnes of coal would you need to provide as much energy as shown in your electricity bill ?

.....
.....

54. A house is fitted with 8 bulbs of 100w each. If the bulbs are lighted for four hours a day, how many Kwh will be consumed ? What will be the bill for 30 days. The cost of energy supplied is 40 paise per Kwh.

.....
.....
.....

55. A 1500 w room heater is used for 10 hours daily. If the energy be 20 paise per unit, what is the cost of using it for a month of 30 days ?

.....
.....
.....

56. The rate of electricity at a place is 60 paise per unit. Compute the total units of electricity required along with the cost of running the following for 30 days:

(a) 6 lamps each of 100 w for 5 hours daily

.....

(b) 3 fans each of 60 w for 10 hours daily and

.....

(c) An electric heater of 1000 w for two hours daily.

.....

.....

OBJECTIVE TYPE QUESTIONS

57. Fill in the blanks :

(a) The -----, the ----- and the ----- are called simple machines.

(b) Moving air and flowing water possesses ----- energy.

(c) An engine can transform ----- of steam into the ----- of the piston.

(d) The discovery of an ----- brought about industrial revolution.

(e) R. Diesel and N. Otto invented ----- engine.

(f) -----, ----- and ----- are the sources of energy.

(g) One Kilo Watt is equal to ----- Watts.

(h) The ----- is a commercial unit of energy.

(i) Count Rumford was earlier known as -----

(j) The energy required to make a cup of tea is ----- KJ.

58. Write true or false against each of the following statements :

(a) Wind mills and water wheels use kinetic energy ()

(b) First windmill was invented in China. ()

- (c) New Commen invented the first steam pumping engine ()
- (d) The unit of power is Watt. ()
- (e) Watt is the commercial unit of energy. ()
- (f) One Horse Power is equal to 746 Watts. ()
- (g) One litre of petrol gives 37 MJ of energy. ()
- (h) One unit of electricity is used up in making 70 slices of toast. ()
- (i) One Kwh is used for playing a T.V. set for 6 Hours. ()
- (j) Nikolaus was given the title of a Count. ()

59. Provide the scientific terms for the following statements :

- (a) The rate at which energy is supplied
- (b) When one Joule of energy is supplied in a second
- (c) When 1 Kw of power is supplied for an hour
- (d) The ability to do work
- (e) A device which can convert heat energy into mechanical energy

MULTIPLE CHOICE QUESTIONS

Tick mark the correct answer :

60. The commercial unit of energy is :

- (a) Joule (b) Watt (c) Kilo Watt (d) Kwh

61. Power is equal to :

- (a) Work done X time (b) Work done per unit time
- (c) Time taken per unit work done (d) None

62. The unit of power is :

- (a) J (b) Js⁻¹ (c) Ws⁻¹ (d) Kws⁻¹

63. Energy can neither be created nor destroyed. This law is called

- (a) Law of conservation of energy (b) Law of conservation of mass
- (c) Law of conservation of matter (d) All of them

64. One Kwh energy is equal to :

- (a) 3600 J (b) 36000 J (c) 36,000 J (d) 36,00,000 J

65. An internal combustion engine was invented by :

- (a) R. Diesel (b) N. Otto (c) Both (d) None

66. One of the following is not a simple machine ?

- (a) Pulley (b) Windmill (c) Inclined plane (d) Screw

67. The rate at which energy is supplied is called :

- (a) Energy (b) Power (c) Work (d) None

68. One of the following was given a title of a 'Count'.

- (a) Thompson (b) Joule (c) N. Otto (d) Diesel

69. The energy needed for one heart beat is :

- (a) 0.1 j (b) 1 j (c) 10 j (d) 100 j

□ □

UNIT 2

FUELS

1. What are fuels ?

.....

.....

2. Define the term 'biomass' in your own words.

.....

.....

3. Name three substances which meet 80% of our domestic energy needs in rural areas.

(a).....(b).....(c).....

4. (a) What is bagasse ?

.....

(b) State one use of it

5. State two disadvantages of traditional chulhas used in rural areas.

(a).....

.....

(b).....

.....

6. What are the advantages of 'smokeless chulhas' ?

(a).....

.....

(b).....

.....

7. How does a smokeless chulha differ from a traditional one ?

.....

-
8. (a) What is charcoal chemically ?.....
- (b) How is it obtained ? Name the process
- (c) How much charcoal can be obtained from 50 Kg of wood ?
9. State two advantages of using charcoal as a fuel. *
- (a).....
- (b).....
10. Animal dung should not be used as fuel for domestic purposes. Give two reasons in support of the statement.
- (a).....
- (b).....
11. (a) What is biogas ?
-
-
- (b) How is it obtained ?
-
-
- (c) What are the constituents of this gas ?
- (d) What is the percentage of methane in it ?.....
- (e) Mention two uses of this gas.
- (i).....(ii).....
12. Name two types of biogas plants used in our country.
- (a).....(b).....
13. Explain in brief the working of a biogas plant.
-

.....
.....
.....

14. Mention two advantages of biogas plants.

(a).....

(b).....

15. (a) What role is being played by the Khadi and Village Industries Commission to popularise biogas plants in our country ?

.....

.....

.....

(b) What type of assistance is our Government offering to farmers for this project ?

.....

.....

16. What are community biogas plants ?

.....

.....

17. (a) What are fossil fuels ?

.....

.....

(b) Give three examples of such fuels.

18. (a) How was coal formed in the earth ?

.....

.....

(b) Where do we have coal mines in India ?

(i).....(ii).....(iii).....(iv).....

19. (a) Name three common varieties of coal.

(i)..... (ii)..... (iii).....

(b) In what way are the various varieties of coal different from each other ?

(c) What is the percentage of carbon in each of the following ?

(a) Peat (b) Anthracite (c) Bituminous

(d) Arrange the following varieties of coal in the order of increasing carbon content :

Bituminous, peat, anthracite, lignite.....

(e) What is meant by destructive distillation of coal ?

(f) What products are obtained as a result of the dry distillation of coal ?

(i).....(ii).....(iii).....

20. (a) Name the process by which coke is obtained ?.....

(b) State one use of coke,

(c) Why is coke seldom used as a fuel ?

(d) Which by-product of the dry distillation of coal find its use in the extraction of metals ?

21. (a) What are the constituents of coal gas ?

(i).....(ii).....(iii).....

(b) What are the uses of coal gas ?

(i).....(ii).....

22. Explain the process of converting coal into the synthetic oil.

.....

[illegible]

.....

.....

(b) HOW has petroleum distribution changed?

.....

Describe how petroleum oil is thought to have been formed under the earth

.....

.....

.....

.....

.....

.....

.....

29. Where are petroleum resources located in India ?

(a).....(b).....(c).....(d).....

30. Name the process used to separate the components of petroleum.

.....

31. Draw a labelled diagram for the fractional distillation of petroleum.

32. (a) What is meant by refining of petroleum ?

.....
.....

(b) Why is it carried out ?

33. (a) What is a fractionating column ?

.....
.....

(b) What is it used for ?.....

34. What is 'Bombay High' and what is it famous for ?

.....
.....

35. Give names and uses of any three fractions obtained during fractional distillation of crude petroleum oil.
- (a).....
- (b).....
- (c).....
36. (a) With which substance is ONGC associated ?
- (b) Expand the abbreviation ONGC
37. Which fraction of petroleum is obtained near the :
- (a) Bottom of the fractionating column.....
- (b) Top of the fractionating column
38. (a) Mention one use of fuel oil
- (b) Why is fuel oil a better fuel than coal ?
- (i).....(ii).....
39. What are the components of petroleum gas ?
- (a).....(b).....(c).....
40. (a) What is LPG ?
- (b) For what purpose is it used ?
- (c) How did domestic gas get this name ?
41. How is the gas used for domestic cooking obtained ?
-
-
42. What fractions of petroleum do we get at the following temperatures ?
- (a) Between 175 to 275°C
- (b) Between 250 to 400°C
- (c) Between 30 to 200°C
- (d) Between 16 to 30°C

(e) Above 350°C

43. At what temperatures do we get the following distillates of petroleum ?

(a) Gasoline(b) Kerosene oil

(c) Diesel oil(d) Paraffin wax

(e) Lubricating oil(f) Petroleum gas

44. (a) State two characteristics of LPG.

(i).....(ii).....

(b) What precaution will you observe while igniting the gas stove ?

(i).....(ii).....

(c) What precautions will you observe while putting off the gas stove ?

(i).....(ii).....

45. (a) Why is LPG preferred to other fuels for household use ?

(i).....(ii).....

(b) Why is some strong smelling substance added to LPG ?

(c) What steps will you take if leakage of LPG is smelt on entering a kitchen ?

(i).....(ii).....

46. Which gas occurs along with petroleum under the earth ? Name the gas. What is it used for ?

.....

47. (a) How is natural gas obtained ?

.....

(b) Name three places in India where natural gas deposits are present.

(i).....(ii).....(iii).....

48. Name two fuels which are used for :

(a) Domestic use(b) Industrial use

49. (a) What is a propellant ?

.....
.....

(b) What principle is exploited to fire rockets in space?

.....
.....

50. List three conditions which must be fulfilled by the rocket fuels.

(a).....
(b).....
(c).....

51. Name four commonly used propellants.

(a).....(b).....(c).....(d).....

52. Which fuel was used in Apollo rocket which flew man to the moon ?

(a) (b)

53. Name two :

(a) Solid fuels(b) Liquid fuels
(c) Gaseous fuels(d) Natural fuels
(e) Processed fuels(f) Primary fuels
(g) Secondary fuels(h) Industrial fuels

54. State two advantages of liquid and gaseous fuels over solid fuels.

(a).....
(b).....

55. What is the difference between a primary fuel and a secondary fuel ?

.....
.....

56. Give the chemical composition of the following gaseous fuels :

- (a) Coal gas (b) Water gas
(c) Producer gas (d) Natural gas.....

57. (a) Define calorific value of a fuel.

.....
.....

(b) What is the importance of calorific value ?

.....

(c) Name two fuels which have high calorific value

58. What is the calorific value of the following fuels ?

(a) Charcoal (b) Wood

(c) Kerosene oil (d) Methane.....

(e) LPG (f) Biogas

59. Why do fuels containing oxygen atoms produce less energy per unit weight ?

.....
.....

60. Define ignition temperature of a substance.

.....
.....

61. How is that a match stick can light a candle but not a log of wood ?

.....
.....

62. What is the name of the minimum temperature to which a substance should be heated before it can catch fire?

63. What is combustion ?

.....

.....

64. How is combustion similar to and different from oxidation ?

.....

.....

65. Why is fire hot ? Explain with reference to burning of methane.

.....

.....

66. Differentiate between respiration and combustion.

<i>Respiration</i>	<i>Combustion</i>
(a).....	(a).....
(b).....	(b).....
(c).....	(c).....

67. List three differences between respiration and photosynthesis.

<i>Respiration</i>	<i>Photosynthesis</i>
(a).....	(a).....
(b).....	(b).....
(c).....	(c).....

68. Name the pollutants produced by burning :

(a) Coal (b) Gasoline.....

69. State six characteristics of an ideal fuel.

(a)..... (b).....

(c)..... (d).....

(e)..... (f).....

70. What points will you keep in mind while selecting a good fuel ?
- (a)..... (b).....
- (c)..... (d).....
- (e)..... (f).....
71. Why do air pollution produced by the burning of oil products more difficult to control than those produced by the burning of coal ?
-
-

OBJECTIVE TYPE QUESTIONS

72. Fill in the blanks :
- (a) Coal is a complex mixture ofand
- (b) Petrol is obtained from crude oil by the process of
- (c) Gasoline and kerosene oil are two important fractions of
- (d) Water gas is a mixture of and
- (e) Fuels used in rockets are called
- (f) Coke is used in metallurgy as a
- (g) A good fuel should have a calorific value.
- (h) Sugarcane from which juice has been extracted is called
- (i) and are called fossil fuels.
- (j) Petroleum gas is a mixture of and
73. Indicate if the following statements are true or false :
- (a) Natural gas mainly contains methane. ()
- (b) Combustion can not take place in the absence of oxygen. ()
- (c) The oldest oil field is at Makum in Assam. ()
- (d) Charcoal is obtained by fractional distillation of wood. ()

- (e) Biogas is a clean fuel because it is free from pollutants. ()
- (f) Anthracite coal contains 92% carbon. ()
- (g) Natural gas was used for lighting houses in Bombay. ()
- (h) Coal gas and water gas are the examples of primary fuels. ()
- (i) Methane has the highest calorific value. ()
- (j) Respiration is called slow oxidation. ()

74. Provide scientific terms for each of the following statements :

- (a) The lowest temperature at which a substance catch fire
- (b) The material contained in the bodies of plants and animals
- (c) Substances which provide heat and light on burning
- (d) Fuels which are used in rockets
- (e) The process of refining petroleum

75. Match the items in Column I with those in Column II :

Column-I

- (a) Sugarcane
- (b) Charcoal
- (c) Biogas
- (d) Coal
- (e) Petroleum

Column-II

- wood
- animal dung
- fossil fuel
- Bombay High
- Jharia
- Bagasse

MULTIPLE CHOICE QUESTIONS

Tick mark the correct answer :

76. Coaltar is obtained from :

- (a) Petrol (b) Petroleum (c) Coal (d) Coke

77. ONGC was set up in the year :

- (a) 1956 (b) 1964 (c) 1974 (d) 1984

78. Which of the following is most combustible substance ?

- (a) Wood (b) Petrol (c) Coal (d) LPG

79. The chief component of natural gas is :

- (a) Carbon dioxide (b) Methane (c) Hydrogen (d) Ethane

80. Which one of the following is the best fuel ?

- (a) Wood (b) Kerosene (c) Natural gas (d) Coal

81. New fields of natural gas are located in India at :

- (a) Tripura (b) Jaisalmer (c) Godavari delta (d) All

82. One of the following is not a primary fuel :

- (a) Coal (b) Wood (c) Coal gas (d) Petroleum

83. Which of the following is a processed fuel ?

- (a) Wood (b) Coke (c) Coal (d) Petroleum

84. The calorific value of LPG is :

- (a) 25 (b) 35 (c) 45 (d) 55

85. Which of the following is a soft coal ?

- (a) Peat (b) Lignite (c) Anthracite (d) Bituminous

□ □

UNIT 3

THE SUN AND NUCLEAR ENERGY

1. Which is the most direct and bountiful source of energy ?
2. (a) What is the mass of the sun ?
(b) How was it proved that the sun was not a huge ball of burning coal ?
.....
.....
(c) How was it shown that the sun is made up of hydrogen ?
.....
.....
3. What is the contribution of Hans Bethe ?
.....
.....
4. (a) Name seven colours of rainbow
(b) Which colour of the light has shortest wave length ?
(c) Which colour of the light has the longest wave length ?
5. (a) Which colours of the light are best suited for photosynthesis ?
(i) (ii)
(b) Why do plants which photosynthesise look green ?
.....
.....
6. (a) What is an ultra-violet light ?
.....
.....

(b) How can you define an infra-red light ?

.....

.....

7. (a) What is the percentage of infra-red light radiated from the sun ?

.....

(b) Where does the rest of the energy of the sun goes ?

.....

.....

8. (a) What percentage of energy is absorbed by the earth's surface ?

.....

(b) What is the most important property of infra-red light ?

.....

9. In which form does the sun radiates energy ?

.....

10. (a) Name the three fundamental particles present in an atom.

(i) (ii) (iii)

(b) Name the particles present in the nucleus of an atom.

(i) (ii)

(c) Which particle is found outside the nucleus of an atom ?

(d) Draw a neat labelled diagram of an atom.

11. Compare an electron, a proton and a neutron in respect of mass and charge :

Electron

- Proton

Neutron

(a) Mass

.....

.....

(b) Charge

.....

.....

12. Explain why an atom is electrically neutral though it contains charged particles in it.

.....

.....

13. Which element normally contains protons and electrons but no neutrons in its atom ?

.....

14. Why do atoms of all elements contain equal number of protons and electrons ?

.....

15. (a) What is meant by the atomic number of an element ?

.....

.....

(b) What is meant by the mass number of an element ?

.....

.....

16. An atom contains 92 protons, 92 electrons and 143 neutrons.

(a) What is its atomic number ?

(b) What will be its mass number ?

17. Which fundamental property of an atom dictates its chemical behaviour ?

.....

18. What is the number of neutrons in the atom of an element whose atomic number is 92 and mass number is 238 ?

.....

19. State the relation between atomic number, mass number and the number of neutrons in an atom.

.....

20. What are isotopes ? Explain with a suitable example.

.....

.....

.....

21. What is the reason for the identical chemical properties of isotopes ?

.....

.....

22. What is the reason for the different atomic masses of isotopes ?

.....

.....

23. Define the term 'Nucleon' in your own words.

.....

.....

24. What name is given to the pairs of atom such as $^{235}\text{U}_{92}$ and $^{238}\text{U}_{92}$

.....

25. Write down the number of protons and neutrons in each of the following atoms :

$^4\text{He}_2$ $^{12}\text{C}_6$ $^{235}\text{U}_{92}$ $^{24}\text{Mg}_{12}$ $^{23}\text{Na}_{11}$ $^{27}\text{Al}_{13}$ $^{14}\text{N}_7$

.....

.....

26. (a) Which isotope of Uranium is most abundantly found on earth ?.....

(b) What is the percentage of U-235 on earth ?

27. What happens when two protons moving at high speed collide with one another?

.....

28. What is the mass and charge of :

(a) Positron (b) Neutrino

29. How are positron and neutrino formed in an atom ?

.....

.....

30. (a) What are chemical reactions ?

.....

.....

(b) Do the nuclei of atoms change during chemical reactions ?

.....

31. (a) What are nuclear reactions ?

.....

.....

(b) Do electrons take part in nuclear reactions ?

.....

(c) Which one evolves a large amount of energy—a nuclear reaction or a chemical reaction ?

.....

32. Give three differences between a chemical reaction and a nuclear reaction ?

Chemical Reaction

Nuclear Reaction

(a).....

(b).....

(c).....

33. Write the names of the three isotopes of hydrogen.

.....

34. What is meant by nuclear fusion ?

.....

.....

35. (a) Does fusion reaction take place at room temperature ?

.....

(b) What kind of reaction causes a hydrogen bomb explosion ?

.....

(c) What type of reaction produces the solar energy ?

(d) What temperature is required to bring about nuclear fusion between two positively charged nuclei ?

.....

36. (a) Give an example of a fusion reaction.

.....

.....

(b) What type of reactions are in progress inside the sun ?

(c) Explain why an extremely high temperature is needed for a fusion reaction to occur ?

.....

.....

37. What is meant by nuclear fission ?

.....

.....

38. (a) Name an isotope of an element whose atoms easily undergo nuclear fission

.....

(b) What type of bombarding particles bring about fission ?

39. (a) Explain what is meant by a chain reaction ?

.....

.....

.....

(b) What particles are utilised for carrying out nuclear chain reaction ?

.....

40. What is the importance of nuclear chain reaction ?

.....

.....

41. What type of reaction forms the basis of :

(a) Atom bomb (b) Hydrogen bomb

42. How do we develop criticality in chain reaction ?

.....

.....

43. Name the bomb whose working is based on nuclear fission ?

44. Out of fission and fusion reactions which would you prefer as the source of energy for peaceful purposes ?

.....

.....

45. What material is used for slowing down the speed of fast moving neutrons ?

.....

46. (a) What is meant by a moderator ?

.....

.....

(b) Name three substances which are used as moderators in nuclear reaction :

(i)..... (ii)..... (iii).....

47. Give two differences between a fission reaction and a fusion reaction ?

Fission Reaction

Fusion Reaction

(a).....

(b).....

48. What is the peculiar property of U-235 ?

.....

49. (a) Name the two forces which operate inside the nucleus.

(i)..... (ii).....

(b) Which of the two forces keep the nucleus intact ?

50. Why do atoms which have large nucleus unstable ?

.....

.....

51. What happens when a slow moving neutron bombards the nucleus of a U-235 atom ?

.....

.....

52. When does a chain reaction attain criticality ?

.....

.....

53. Name the scientist who successfully carried out the first critical nuclear reaction

.....

54. What is the contribution of Enrico Fermi ?

.....

55. What is an atomic reactor ?

.....

.....

56. How is heat energy recovered from an atomic reactor ?

.....

.....

57. What use is made of the heat produced in atomic reactor ?

.....

.....

58. What fuels are used in nuclear reactors ?

(a) (b)

59. What would happen if a nuclear chain reaction is allowed to proceed uncontrolled ?

.....

.....

60. (a) Name the organisation which is mining fuel for nuclear reactors.

.....

(b) Where is this organisation located in India ?

(c) Where is nuclear fuel processed and enriched in India ?

.....

61. Name four atomic power stations of our country.

(a) (b)

(c) (d)

62. In brief discuss how a nuclear plant uses a nuclear reaction to generate electricity.

.....

.....

.....

63. State two advantages of the nuclear fusion reaction over nuclear fission reaction.

(a)

- (b).....
64. What is the most important use of atomic energy these days ?
.....
65. With which scientific activity are the following places associated?
Tarapur, Kalpakam, Narora, Kota
.....
66. What is the use of heavy water in nuclear reactors ?
.....
67. Name four places where heavy water plants are located in India.
(a)..... (b)..... (c)..... (d).....
68. What is meant by nuclear waste ?
.....
.....
69. In what ways are nuclear radiations harmful to living beings ?
(a).....
(b).....
70. Name two places where two major accidents in atomic reactors took place.
.....
71. Suggest three ways to minimise the toxic discharge in the environment.
(a).....
(b).....
(c).....
72. What is meant by 'energy crisis' ?
.....
.....
73. What are non-renewable sources of energy ?
.....

74. What steps should we take to avert the depletion of energy resources like coal, oil and natural gases ?
- (a).....
- (b).....
75. State two disadvantages of energy system using nuclear fission.
- (a).....
- (b).....
76. Name two factors on which the amount of energy consumed and produced by a country depends on.
- (a) (b)

OBJECTIVE TYPE QUESTIONS

77. Fill in the blanks :

- (a) The source of energy radiated by the sun is reaction.
- (b) Positron carries one unit charge.
- (c) The basis of nuclear reactor is reaction.
- (d) Elements like and absorb fast moving neutrons.
- (e) The atomic mass of uranium used in atom bomb is
- (f) Nuclear chain reactions are caused by
- (g) The radioactive particle identical to an electron is
- (h) and rods are used as moderators in atomic reactors.
- (i) light heats up the land and water on the earth.
- (j) The percentage of U-235 is about

78. Indicate if the following statements are true or false ?

- (a) Atomic bombs are based on fission chain reaction. ()
- (b) Nuclear fuel complex is located at Jaduguda in Bihar. ()
- (c) The nuclear fuels do not pose any pollution problem. ()

- (d) The fusion energy is better than fission energy. ()
- (e) Three neutrons are released in one fission reaction. ()
- (f) The sun derives its energy from fission of H_2 molecules. ()
- (g) A massless neutral particle is called Positron ()
- (h) The nuclear force may be attractive or repulsive. ()
- (i) Atom is electrically neutral. ()
- (j) Nuclear fission reaction are better than nuclear fusion ones. ()

79. Provide scientific terms for each of the following statements :

- (a) A process in which lighter nuclei combine to form heavy nuclei
- (b) A process in which a heavy nuclei is broken up to form lighter nuclei
- (c) The total number of protons and neutrons in a nucleus
- (d) The substances which slow down the speed of fast neutrons
- (e) Elements having same atomic number but different mass number

80. Match the items in Column I with those in Column II.

Column I

- (a) Uranium
(b) Heavy Water
(c) Tarapur
(d) Nucleons
(e) Fermi

Column II

- (i) Moderator
(ii) Atomic Power Station
(iii) Protons plus Neutrons
(iv) Nuclear reaction
(v) Nuclear Fuel
(vi) Chemical reaction

MULTIPLE CHOICE QUESTIONS

Tick mark the correct answer :

81. The first critical nuclear reaction was carried out by :

- (a) Bohr (b) Rutherford (c) Fermi (d) Curie

82. Isotopes of the same elements have the same number of :

- (a) Protons (b) Electrons (c) Neutrons (d) None

83. The number of neutrons in the nucleus of $^{208}_{84}\text{Po}$ is :

- (a) 84 (b) 94 (c) 104 (d) 124.

84. Uranium is processed and enriched at :
(a) Tarapur (b) Hyderabad (c) Kota (d) Narora
85. The marble of Taj Mahal is corroding due to the effect of :
(a) CO_2 (b) SO_2 (c) NO_2 (d) Co
86. Electrons are also called :
(a) Alpha-particle (b) Beta-particle (c) Gamma-particle (d) None
87. The percentage production and consumption of energy in India is :
(a) 2 (b) 4 (c) 8 (d) 10
88. One of the following is not a nuclear fuel :
(a) Uranium (b) Plutonium (c) Radium (d) Thorium
89. Plutonium is artificially made from :
(a) U-235 (b) U-238 (c) Po-238 (d) None.
90. A massless neutral particle is called the :
(a) Positron (b) Neutrino (c) Neutron (d) None.



UNIT 4

NUTRITION

1. (a) What is food ?

.....

.....

(b) What are the six main nutrients that are found in our food ?

(i) (ii) (iii) (iv) (v) (vi)

2. What are the functions of food in our body ?

(a)

(b)

(c)

3. How can glucose solution help a patient when he can not eat ?

.....

.....

4. (a) What is meant by the term 'food habit' ?

.....

.....

(b) Why do food habits vary from region to region ?

.....

.....

5. Most of our food comes from just 14 Crops. Can you name six of them ?

(a) (b) (c) (d) (e) (f)

6. (a) What are nutrients ?

.....

.....

(b) What is the difference between the nutrient and the food ?

.....

.....

7. Name three factors on which our food requirement depends ?

(a)..... (b)..... (c).....

8. Give reasons for each of the following :

(a) Why do growing children need more energy ?

.....

.....

(b) Why should special attention be paid to the diet of pregnant and nursing mothers ?

.....

.....

9. How much energy is used (per hour per Kg of body weight) for performing the following activities ?

(a) Sleeping(b) Sitting(c) Standing still.....

(d) Mild exercise (e) Heavy physical work (f) Walking

10. (a) What is a balanced diet ?

.....

.....

(b) What components should be included to make the diet balanced ?

(i) (ii) (iii)..... (iv)..... (v)..... (vi).....

11. Why does balanced diet vary according to age, sex and profession ?

.....

.....

12. (a) What is roughage ?

(b) Why must they be included in our diet ?

(c) Name four sources of roughages in our food.

(i)..... (ii)..... (iii)..... (iv).....

13. Why do growing children and pregnant women needs more proteins ?

14. Why is carbohydrate rich food more essential for people doing hard manual work ?

15. Name three substances rich in :

(a) Carbohydrates (b) Fats

(c) Proteins (d) Calcium

(e) Iron (f) Phosphorus

(g) Sulphur (h) Iodine

16. Name four life processes in which water plays an important role.

(a).....(b).....(c).....(d).....

17. (a) What are carbohydrates ?

(b) What are the three kinds of carbohydrates ? Do we digest all of them.

(i)..... (ii)..... (iii).....

(c) What is the importance of carbohydrates in our diet ?

.....

.....

(d) Name two carbohydrates. (i)..... (ii).....

18. (a) Name five cereal crops of India which are rich in carbohydrates.

(i)..... (ii)..... (iii)..... (iv)..... (v).....

(b) What is the energy value of carbohydrates ?

(c) In what forms do you consume carbohydrates ?

.....

19. How would you show the presence of :

(a) Starch in potato

.....

.....

(b) Sugar in banana

.....

.....

(c) Proteins in the white of an egg

.....

.....

(d) Fat in groundnuts

.....

.....

20. (a) What are fats ?

.....

.....

(b) What is the difference between fats and carbohydrates ?

.....

.....

(c) What role do they play in our body ?

.....

(d) What happens to excess of fat in the body ?

.....

.....

21. (a) Name two components of fats.

(i)..... (ii).....

(b) Which enzyme can hydrolyse fat during digestion ?

(c) Name three animals which store fat for later use.

(i)..... (ii)..... (iii).....

22. (a) In what solvents are fats soluble ?

(i)..... (ii)..... (iii).....

(b) What are the sources of fats in our diet ?

(i)..... (ii)..... (iii)..... (iv).....

(c) What is the energy value of fats ?

23. (a) What are saturated and unsaturated fats ?

.....

.....

.....

(b) Name one food item having each kind :

(i)..... (ii).....

24. What kind of health hazards are associated with high intake of saturated fat in the diet ?

.....

25. Which fatty acids are present in :

(a) Butter (b) Coconut oil..... (c) Animal fat.....

26. (a) What are essential fatty acids ?

.....

.....

(b) Which is the most important fatty acid ?.....

(c) How do we get them ?.....

27. (a) What is hydrogenation ?

.....

.....

(b) What happens to essential fatty acids during this process ?

.....

28. Which substance gives more energy when taken in same amount-fat or carbohydrate ?

.....

29. (a) What are proteins ?

.....

.....

(b) How are proteins different from carbohydrates and fats ?

.....

.....

(c) What is the ultimate unit of proteins ?

(d) What elements are present in proteins ?

(i)..... (ii)..... (iii)..... (iv)..... (v).....

30. (a) What are amino acids ?
.....
(b) How are they united in making proteins ?

31. What is a peptide bond ?
.....
(b) What is the relationship between amino acids, peptide bonds and proteins ?
.....
.....

32. (a) What is the role of proteins in our body ?
.....
.....
(b) What is its energy value ?

33. How many types of proteins do you know ? Name them along with their functions.

Types of Proteins		Functions	
(a)	.....	(a)	.....
(b)	.....	(b)	.....
(c)	.....	(c)	.....
(d)	.....	(d)	.....
(e)	.....	(e)	.....
(f)	.....	(f)	.....

4. Why are plant proteins inferior to animal proteins ?
.....
.....

35. Name three best sources of :
(a) Plant proteins (b) Animal proteins

36. Why are carbohydrates and fats known as 'energy foods' ?
.....
37. Under what conditions a high protein diet is needed ?
(a) (b)
38. What are the two main sources from which human body obtains water ?
(a) (b)
39. What role do water play in the human body ?
(a).....
(b).....
(c).....
40. (a) Write down the balanced chemical reaction for complete oxidation of a molecule of glucose in the body.
.....
(b) How many grams of water will you get from 1 gram of glucose on oxidation ?
.....
.....
41. (a) What are minerals ?
.....
.....
(b) Name six minerals which are essential for normal growth of our body.
(i) (iv)
(ii) (v)
(iii) (vi)
42. (a) What are the functions of minerals in our body ?
(i)
(ii)
(b) How are minerals lost by the body ?
.....

43. (a) What is dehydration of tissues or cells ?

.....

.....

(b) How can it be prevented ?

.....

.....

44. Name the mineral essential for :

- (a) Bones and teeth (b) Formation of haemoglobin
(c) Synthesis of thyroid hormone (d) Regulation of osmotic pressure

45. (a) What are vitamins ?

.....

.....

(b) Name two groups of vitamins and state which vitamin occurs in each group.

- (i) (ii)

46. Complete the following table :

S.No.	Name	Their source	One deficiency disease	Two symptoms
1. Vitamin A				
2. Vitamin B1				
3. Vitamin B2				
4. Vitamin B4				
5. Vitamin B12				
6. Vitamin C				
7. Vitamin D				

47. Why are minerals and vitamins known as 'protective foods' ?

.....

.....

48. Why should plenty of salad and leafy vegetables be included in the diet of all individuals ?

.....

.....

49. Why is milk considered as the best diet for all individuals ?

.....

.....

50. What should be included in the diet of the following persons ?

(a) Pregnant women

.....

(b) Nursing mothers

.....

(c) Growing children

.....

(d) Convalescing patients

.....

51. What are deficiency diseases? Give two examples.

.....

.....

52. Define the following terms :

(a) Malnutrition

.....

.....

(b) Undernutrition

.....

.....

53. What are the causes of malnutrition in India ?

(a)..... (b)..... (c).....

54. (a) What do you mean by PEM diseases ?

.....
.....

(b) Name two PEM diseases : (i)..... (ii).....

55. Mention four symptoms of each of the following diseases :

Kwashiorkor

Marasmus

(a)	(a)
(b)	(b)
(c)	(c)
(d)	(d)

56. (a) How can PEM diseases be prevented in children ?

.....

(b) Why these diseases are common among children ?

.....

57. What are the symptoms of the following diseases ?

(a) Anaemia

.....

(b) Ricket

.....

(c) Goitre

.....

(d) Scurvy

.....

(e) Pellagra

.....

58. Name the vitamins/minerals whose deficiency causes following disorders in humans :

(a) Pellagra (b) Ricket (c) Scurvy

(d) Beri-beri (e) Goitre (f) Anaemia

59. What do you call to the disease when the bones show a tendency towards easy fracture ?

.....

60. What is the advantage of taking brown bread over white bread ?

.....

.....

61. Unpolished rice is considered better than polished rice. Why ?

.....

62. Why is goitre very common in the sub-Himalayan regions of our country ?

.....

63. (a) What is anaemia ?

.....

(b) How is it caused ?

.....

(c) What are its symptoms ?

.....

64. What is an endemic disease ? Give an example.

.....

.....

65. Why is Vitamin D also known as 'Sun shine' Vitamin?

.....

.....

66. Name four factors which leads to loss of nutrients value.

(a)..... (b).....

(c)..... (d).....

67. Name the vitamins that are lost during frying.

.....

68. Food in India is mostly overcooked before it is served. What impact does this practice have on its quality ?

.....

69. Why should vegetables be washed before cutting for cooking ?

.....

70. What happens if fruits and vegetables are left cut for long ?

.....

71. (a) What is obesity ?

.....

.....

(b) What causes obesity ?

(i)..... (ii)..... (iii).....

(c) How can it be prevented ?

(i)..... (ii).....

72. (a) Why do many people become obese as their age advances ?

.....

.....

(b) What are the health hazards associated with obesity ?

(i)..... (ii)..... (iii).....

73. (a) What causes fluorosis in humans ?

.....
(b) What are its symptoms ?
.....

74. (a) What is hypervitaminosis ?

.....
(b) Why does it occur ?
.....

75. (a) What is food adulteration ?

.....
(b) Name the organization which certify about the purity of a substance.
.....

76. What do the mark 'ISI' and 'AGMARK' labels indicate ?

77. What common adulterants are found in the following food items ?

(a) Dals (b) Haldi (c) Dhania powder
(d) Black pepper (e) Maida (f) Chilli powder

78. How will you show the presence of vanaspati ghee in butter ?

.....
79. How can you indicate that an edible oil contains argemone oil ?
.....
.....

80. What test would you perform to show the presence of metanil yellow in dals ?

.....

.....

OBJECTIVE TYPE QUESTIONS

81. Fill in the blanks :

- (a) Fats are made up of and
- (b) Vitamin C deficiency causesin humans.
- (c) Energy giving foods are rich in and
- (d) Protective foods are rich in and
- (e) Amino acids are united to one another by bonds.
- (f) and are two PEM diseases of children.
- (g) Growing children and pregnant women needs more
- (h) , and are abundant in starch.
- (i) One gram of fat gives KJ of energy on oxidation.
- (j) Lipase enzyme hydrolyse in the body.

82. Are the following statements true or false ?

- (a) Rice and maize have the highest carbohydrate content. ()
- (b) Cell walls of plant cells is made up of cellulose. ()
- (c) Saturated fatty acids have low melting points. ()
- (d) A peptide bond join the amino acids. ()
- (e) Fats contain less oxygen hence gives more energy. ()
- (f) Nitrogen and sulphur are essentially present in proteins. ()
- (g) Our cell contains 2000 different kinds of proteins. ()
- (h) Iodine is essential for the formation of red blood cells. ()
- (i) Vitamin B-complex is water soluble. ()

(j) PEM diseases are common in pre-school children.

83. Match the items of Column I with those of Column II.

Column I

- (a) Calciferol
- (b) Ascorbic acid
- (c) Thiamine
- (d) Retinol
- (e) Niacin

Column II

- Anaemia
- Pellagra
- Night blindness
- Beri-beri
- Scurvy
- Ricket

84. Provide scientific terms for each of the following statements :

- (a) Indigestible plant cellulose which prevents constipation
- (b) An energy rich substance containing C, H₂ and O₂ only
- (c) The process of passing H₂ through oils to make ghee
- (d) A sun shine vitamin
- (e) Inadequate intake of food nutrients

MULTIPLE CHOICE QUESTIONS

Tick mark the correct answer :

85. Kwashiorkor is a nutritional disease caused by the deficiency of :
(a) Proteins (b) Vitamins (c) Carbohydrates (d) Fats
86. Which mineral is an essential components of red blood cells ?
(a) Zinc (b) Iron (c) Copper (d) Calcium
87. Ricket in children is caused due to deficiency of vitamin :
(a) A (b) D (c) C (d) E
88. Marasmus can be prevented by giving children food rich in :
(a) Proteins (b) Fats (c) Carbohydrates (d) Vitamins
89. Which of the following sugar is present in blood ?
(a) Glucose (b) Sucrose (c) Maltose (d) Cellulose
90. Which one of the following element is absent in fats ?
(a) Carbon (b) Hydrogen (c) Nitrogen (d) Oxygen
91. Osteomalacia in adults is caused due to deficiency of :
(a) Ca (b) P (c) Vitamin D (d) All

92. Dehusked or polished rice is deficient in :

- (a) Vitamin A (b) Vitamin B1 (c) Vitamin B2 (d) Vitamin B4

93. Pellagra is common among people living on a diet of :

- (a) Wheat (b) Maize (c) Rice (d) Barley

94. A obese person can have one of the following disorder :

- (a) Hypertention (b) Arteriosclerosis (c) Coronary attack (d) All



FOOD PRODUCTION

1. Define the following terms :

(a) Autotrophs

.....

.....

(b) Heterotrophs

.....

.....

2. (a) What is meant by the term 'agriculture' ?

.....

(b) At what time in history man started cultivation ?

(c) Why did man think of cultivating plants ?

.....

.....

3. What is the position of agriculture in our country ?

.....

.....

4. What is the aim of modern agriculture ?

.....

.....

5. How did nomadic life came to an end ?

.....

.....

6. What do you mean by agricultural practices ?

.....

.....

7. What is the sequence of the steps followed in the cultivation of plants ?

- (a)..... (b)..... (c).....
- (d)..... (e)..... (f).....
- (g)..... (h)..... (i).....

8. Modern agriculture needs the support of a vast infrastructure. Justify the statement.

.....

.....

9. State two main characteristics of primitive agriculture.

- (a).....
- (b).....

10. Why is agriculture known as a primary industry in India ?

.....

11. What are the inputs necessary for increasing agricultural production ?

- (a)..... (b)..... (c).....
- (d)..... (e)..... (f).....

12. What are the four important factors which influence crop production ?

- (a)..... (b).....
- (c)..... (d).....

13. Name six implements used in agriculture.

- (a)..... (b)..... (c).....
- (d)..... (e)..... (f).....

14. (a) What is soil ?

.....
(b) In what ways is soil useful to plants?

(i)..... (ii)..... (iii).....

(iv)..... (v)..... (vi).....

(c) Why do potted plants suffer if they contain excess of water ?

.....
.....

15. (a) How many elements are essential for the normal growth of plants ?

.....

(b) Name two categories of plants nutrients :

(i)..... (ii).....

16. (a) What are macronutrients ?

.....

(b) Why are they so called ?

.....

(c) Name six macronutrients .

1 2 3

4 5 6

17. (a) What are micronutrients ?

.....

.....

(b) State the names of five micronutrients required by plants.

(i)..... (ii)..... (iii)..... (iv)..... (v).....

18. How can the deficiency of macro and micro nutrients in a crop field be made good. List three ways.

(a)

(b)

(c)

19. What will happen if the same crop is repeatedly grown year after year on the same field ?

.....

20. What is the advantage of leaving the land 'fallow' (unused) for sometime ?

.....

.....

21. (a) What is crop rotation ?

.....

.....

(b) What is the importance of this practice ?

.....

(c) Why is it advisable to grow a pulse crop between the cereals ?

.....

.....

(d) Which bacteria is present in the roots of legumes ?

(e) Give one example of a crop rotation most commonly followed in your area.

.....

22. (a) Why is soil turned and loosened before sowing ?

.....

(b) State two advantages of ploughing.

(i)

(ii)

(c) Why do we use wooden plank in the fields ?

.....

23. What basic steps would you include for integrated land management ?

(a)..... (b)..... (c).....

24. (a) What are the two methods of sowing seeds ?

(i)..... (ii).....

(b) Which method of sowing would you recommend to an Indian farmer any why ?

.....
.....

(c) What is a seed drill ?

.....

(d) What is the advantage of a seed drill ?

.....

(e) Why is seed treatment essential before sowing ?

.....

25. (a) What is meant by transplantation ?

.....
.....

(b) Name five crops for which this technique is used :

(i)..... (ii)..... (iii)..... (iv)..... (v).....

(c) State three advantages of this technique.

(i).....

(ii).....

(iii).....

26. (a) What is a manure ?

.....

.....
(b) How is manure different from fertilizers ?
.....
.....

(c) What precautions should the farmer observe while fertilizing a crop ?

(i).....

(ii).....

(iii).....

(d) Name four most commonly used fertilizers.

(i)..... (ii)..... (iii)..... (iv).....

27. (a) What is 'Eutrophication' ?

.....

.....

(b) Why does it take place ?

.....

28. What is the per-hectare consumption of fertilizers in Kg in :

(a) India (b) Egypt (c) France (d) UK

29. (a) What are the methods of irrigation followed in India ?

(i)..... (ii)..... (iii).....

(b) State four main sources of irrigation.

(i)..... (ii)..... (iii)..... (iv).....

(c) On what factors does the irrigation requirement of a crop depends.

(i)..... (ii).....

(d) At what stages a wheat crop should be irrigated ?

(i)..... (ii)..... (iii).....

30. (a) What is logging.

.....
.....

(b) How does it affect a standing mature crop ?

.....
.....

31. What problems have been created by the extensive irrigation system in India ?

(a)..... (b).....

32. What will happen if :

(a) Excess of nitrogenous fertilizer is applied into the field

.....
.....

(b) The field remains water logged .

.....
.....

(c) The weeds are allowed to grow along with crop plants.

.....
.....

33. (a) What is a weed ?

.....
.....

(b) What are the harmful effects of weeds on crop plants ?

.....

(c) How can the weeds be controlled?

(d) Name four common weeds found in wheat and rice fields.

(i) (ii) (iii) (iv)

34. Name two :

(a) Weedicides (b) Pesticides

(c) Seed-borne diseases (d) Soil-borne diseases

(e) Diseases of wheat (f) Diseases of rice

(g) Diseases of cotton (h) Pests of cotton

35. Why do weeds multiply and spread so fast in the fields ?

36. (a) What is a pest?

(b) Distinguish between a pest and a disease.

(c) Name four groups of microbes which cause diseases.

(i) (ii) (iii) (iv)

37. (a) What are pesticides ?

(b) How are they used ?

(c) What precautions the farmer should observe while using a pesticide on the field ?

(i)..... (ii).....

(iii)..... (iv).....

(v)..... (vi).....

38. Name the causative organism and the crop due to which famine occurred in Ireland in 1845.

.....

39. (a) What methods do you suggest for controlling crop diseases?

(i)..... (ii).....

(iii)..... (iv).....

(b) How can seed-borne diseases be eliminated ?

.....

40. What should be the characteristics of a good pesticide?

(i)..... (ii).....

(iii)..... (iv).....

41. (a) What is the most important goal of our agricultural research universities ?

.....

.....

(b) What is hybridization ?

.....

.....

42. What were the desirable characteristics of high yielding Mexican varieties of wheat which were introduced in India in 1960.

(a)..... (b)..... (c).....

43. Name three high yielding varieties of :

(a) Wheat.....

(b) Maize.....

(c) Rice.....
44. Why did Indian farmer adopted high yielding varieties of crops ?

(i) (ii).....

(iii) (iv).....

45. What are the advantages of using mechanized threshers and combines in India ?

(a).....

(b).....

46. (a) What is Green revolution ?

.....

.....

(b) State four factors that led to green revolution in India.

(i)..... (ii).....

(iii)..... (iv).....

47. Why did man domesticated animals ?

.....

.....

48. Name seven food yielding animals.

(a)..... (b)..... (c)..... (d)..... (e)..... (f)..... (g).....

49. Name two animals which are used by man for :

(a) Transport..... (b) Milk

(c) Meat..... (d) Wool

50. (a) What is animal husbandry ?

.....

.....

(b) What are the four elements of animal husbandry ?

(i)..... (ii).....

(iii)..... (iv).....

51. (a) What is a feed ?

.....
.....

(b) What are the main components of a good feed ?

(i)..... (ii).....

52. (a) What are roughages ?

.....
.....

(b) From where do animals obtain it ?

53. (a) What are concentrates ?

.....
.....

(b) How do animals obtain these concentrates ?

.....

54 (a) How does food affect yield in dairy animals ?

.....
.....

(b) Name three factors on which food requirement of an animal depends

(i)..... (ii)..... (iii).....

55. (a) What are the main reasons for low yield of milk in India ?

(i)..... (ii).....

(b) What steps do you propose to increase milk yield in India ?

(i)..... (ii).....

56. (a) Name few grains which are used as poultry feed.

.....
(b) How many eggs a good poultry breed can lay annually ?

57. What are the characteristics of a good animal shelter ?

.....
58. What proposal do you suggest to reduce the incidence of diseases in animals ?

(a).....

(b).....

(c).....

59. Name three common diseases of :

(a) Cattle

.....
(b) Poultry

60. (a) How would a farmer know if a particular animal is suffering from a disease ?

.....
(b) What is a veterinary surgeon ?

61. (a) How can superior quality animals be evolved by the use of hybridization technique ?

(b) What characteristics will you keep in mind for animal breeding ?

(i)..... (ii)..... (iii).....

62. (a) What is artificial insemination ?

.....
.....

(b) What are the advantages of this technique ?

(i)..... (ii).....

(c) How many cows can be impregnated with the semen of a single bull ?.....

63. Name two high yielding breeds of :

(a) Cows (b) Buffaloes

(c) Poultry (d) Sheep

64. (a) What is the food value of fish ?

.....

(b) Name three fresh water fishes of India

(c) What is the advantage of hatcheries ?

.....

65. What is the position of India among the leading fish producing countries of the world ?

.....

66. Complete the following table :

S.No.	Disease	Causative agent	Animal affected	Symptoms
1.	Tuberculosis			
2.	Ranikhet			
3.	Foot and Mouth			
4.	Rinderpest			
5.	Aspergillosis			

67. What for are the following implements used by the farmer ?

(a) Harrow (b) Sickle

- (c) Plough (d) Seed drill
- (e) Khurpa (f) Combines
- (g) Sprayer (h) Leveller

68. Why is it necessary to improve our crop plants ?

- (a).....
- (b).....

69. What are the disadvantages of sowing by broadcasting method ?

- (a).....
- (b).....

70. What steps are to be taken for the proper management of livestock ?

- (a)..... (b).....
- (c)..... (d).....

71. How did domestication of plants help human civilization ?

-
-

72. What are the three things you will keep in mind while feeding high yielding cows ?

- (a)..... (b)..... (c).....

73. What are the causes of low crop yield in India ?

- (a)..... (b)..... (c).....
- (d)..... (e)..... (f).....

OBJECTIVE TYPE QUESTIONS

74. Fill in the blanks :

- (a) The process of watering plants in the field is known as
- (b) Unwanted plants in a crop field are called
- (c) Ranikhet is a common disease of

- (d) Crop needs protection from , and
- (e) Crops are harvested manually with a
- (f) The process of crossing two varieties is known as
- (g) Compost is an
- (h) are required in traces by the plants for normal growth.
- (i) Seeds are treated with before sowing to prevent
- (j) Manure is obtained by the microbial decomposition of and

75. Indicate whether the following statements are true or false ?

- (a) Blast is a disease of wheat. ()
- (b) Hybridization means crossing two plants with desired features. ()
- (c) Harrow is used for ploughing. ()
- (d) 70% of Gross National Product comes from agriculture. ()
- (e) Nitrogenous fertilizers are applied before sowing. ()
- (f) Irrigation requirements depends upon the nature of soil. ()
- (g) Amaranthus and Chenopodium are common diseases of wheat. ()
- (h) Boll worms infect cotton bolls and do lot of damage. ()
- (i) Jaya and Padma are high yielding varieties of rice. ()
- (j) Mexican varieties of wheat were introduced by Dr. Norman Borlaug. ()

76. Match the items in Column I with those in Column II

Column I

- (a) Jersey
(b) Murrah
(c) Pashmina
(d) Gaddi
(e) White leg horn

Column II

- poultry
goat
cow
buffalo
sheep
fish

77. Provide scientific terms for each of the following statements :

- (a) The process of separating grains from straw

- (b) The process of crossing two varieties with desirable characters
- (c) The act of putting seeds into the soil
- (d) The process of turning and loosening top soil before sowing
- (e) The act of taking plants from nurseries and putting them in field

MULTIPLE CHOICE QUESTIONS

Tick mark the correct answers :

78. The average yield of wheat in India in Kg/hectare is :
 (a) 1000 (b) 1500 (c) 2000 (d) 2500
79. A disease caused by virus in cattle is :
 (a) Anthrax (b) Rinderpest (c) Tuberculosis (d) Foot and Mouth
80. Meat of which one of the following animal has the highest protein content :
 (a) Fowl (b) Cattle (c) Pig (d) Fish
81. One of the following is a marine fish :
 (a) Catla (b) Tilapia (c) Sardine (d) Rohu
82. One of the following is a high yielding breed of buffalo :
 (a) Jersey (b) Karan Swiss (c) Murrah (d) Karan Fries
83. Which one of the following is not a breed of poultry ?
 (a) White leg horn (b) Rhode Island red (c) Pashmina (d) B77
84. India occupies one of the following position in the fish production in the world :
 (a) 5th (b) 6th (c) 7th (d) 8th
85. Which one of the following is an essential element of animal husbandry ?
 (a) Proper feeding (b) Proper rearing (c) Proper breeding (d) All
86. One of the following is a roughage :
 (a) Maize (b) Wheat (c) Jowar (d) Berseem grass
87. One of the following is not a high yielding variety of wheat ?
 (a) Larma (b) Kalyan (c) Jaya (d) Arjun

MANAGEMENT OF FOOD RESOURCES

1. Name four food resources obtained from :

(a) Plants

(b) Animals

2. Why is it desirable to conserve and preserve food materials ?

(a).....

(b).....

3. List three advantages of adopting proper management practices for various food resources.

(a).....

(b).....

(c).....

4. What are the important elements of efficient management of food resources ?

(a)..... (b)..... (c).....

(d)..... (e)..... (f).....

(g)..... (h)..... (i).....

5. (a) What is the first step in planning for food resources ?

(b) What factors do we keep in mind while fixing annual production targets ?

(i)..... (ii)..... (iii).....

(c) How do we set procurement targets ?

.....

.....

6. Why do plan targets sometimes fail ?

(a).....

- (b).....
7. (a) How is weather forecasting helpful to farmers ?
.....
.....
- (b) What recent developments have taken place in this direction ?
(i).....
(ii).....
8. (a) What is the basis of 'flood forecasting' ?
.....
.....
- (b) How does this technique help people ?
.....
.....
9. What important decisions farmers have to take to ensure a good harvest ?
(a)..... (b).....
(c)..... (d).....
10. State any five factors which affect the crop yield during pre-harvesting period.
(a).....
(b).....
(c).....
(d).....
(e).....
11. (a) What do you mean by the term 'harvesting' ?
.....
.....

(b) What are the factors which determine the time for harvesting of a particular crop ?

(i).....

(ii).....

(iii).....

12. What are the factors which determine maturity of grains before harvesting ?

(a).....

(b).....

13. (a) What should be the percentage of moisture in the Cereal grains at the time of harvesting ?

(b) How will you decide whether the grains are ready for harvesting or not ?

.....

.....

14. List three post-harvesting measures essential for protecting food grains.

(a).....

(b).....

(c).....

15. (a) What will you do if the grains contain more than 14% moisture ?

.....

(b) Why and how are grains dried ?

.....

.....

16. Why do fruits and vegetables get damaged more easily than food grains

.....

17. What precautions should be taken before storing food grains ?

(a).....

(b).....

18. What precautions should be observed before transporting fruits and vegetables to the market ? (i)
- (a).....
- (b).....
19. On what factors does the keeping quality of underground crops like potato, onion etc ,depends ? (ii)
- (a).....
- (b).....
20. Why is it essential to remove rotton, over-ripened, badly bruised fruits and vegetables after harvesting?
-
-
21. How does food preservation help in ensuring food supply throughout the year ?
-
-
-
22. Name three abiotic factors which damage :
- (a) Food grains
-
- (b) Fruits and vegetables
-
23. What is the effect of high moisture content in food grains during storage ?
-
-
24. (a) What is meant by 'dry heating of food grains' ?
-
-
- (b) Why does it take place ?
-

25. (a) What abiotic factors accelerate the growth of moulds on the food grains ?
 (i) (ii).....
 (b) What is known as 'wet heating of food grains' ?

 (c) What are the harmful effects of damp grain heating on food grains ?
 (i) (ii).....
26. What is the optimum temperature for the best growth of :
 (a) Insects (b) Microbes (c) Enzymes
27. Why is it essential to maintain fruits and vegetables at low temperature for their safe storage ?

28. Name two biotic factors which damage our :
 (a) Food grains

 (b) Fruits and vegetables

29. How do rodents damage stored food grains ?

30. (a) Name the bacteria which causes food poisoning in humans
 (b) Name three animals which cause damage to standing crops.
 (i) (ii)..... (iii)..... (iv).....
31. (a) What is meant by the term 'infestation' ?
 (b) Name four pests which damage stored food grains.
 (i) (ii)..... (iii)..... (iv)
32. (a) Name three microbes that attack stored food grains.
 (i) (ii)..... (iii).....

(b) How do microbes cause damage to food grains in storage ?

33. State two indications of infestation by insects and microbes in stored food grains.

(a).....

(b).....

34. What percentage of food grains are lost during storage every year ?

.....

35. (a) What is an enzyme ?

.....

(b) What function do they play ?

.....

(c) Do they work in stored fruits and vegetables also ?

(d) Give two examples of spoilage caused due to enzyme action.

(i)..... (ii).....

36. What are the essential features of a good storage structure for food grains ?

(a)..... (b).....

(c)..... (d).....

(e).....

37. Name two main types of storages which are found in India.

(a)..... (b).....

38. (a) What is meant by dry storage ?

.....

(b) Name five food substances which can be stored by this method.

(i)..... (ii)..... (iii)..... (iv)..... (v).....

39. (a) What are the main requirements of a good store for food grains ?

.....

.....

(b) In what type of containers are non-perishable food materials generally stored ?

(c) Why is it essential to use only new gunny bags for food storage ?

(d) Can you use old bags for food storage ? If so how ?

40. How are bags full of food grains stacked in a godown ?

(a).....

(b).....

41. (a) What is a grain silo ?

(b) When do we use it ?

(c) What are the advantages of storing food grains in silos ?

(i)..... (ii).....

(iii)..... (iv).....

42. (a) What is meant by 'cold storage' ?

(b) Name five food substances which can be stored by this method.

(i)..... (ii)..... (iii)..... (iv)..... (v).....

(c) What are the advantages of storing food materials at low temperature ?

(i)..... (ii).....

(iii)..... (iv).....

43. What is the recommended temperature range for storage of the following perishable food materials ?

- (a) Fruits and vegetables (b) Dairy products
(c) Meat (d) Fish
(e) Frozen foods (f) Fowl

44. How does low temperature help in storage of perishable fruits and vegetables ?

.....
.....

45. Why is it necessary to inspect stored grains atleast once every fortnight ?

.....
.....

46. (a) What is a pesticide ?

.....

(b) Name two methods of using pesticides in storage.

(i) (ii)

(c) When is spraying effective ?

.....

(d) Name two pesticides which are most commonly used in storage.

(i) (ii)

47. (a) What are fumigants ?

.....

.....

(b) When are these chemicals used ?

.....

(c) Name two fumigants. (i) (ii)

48. (a) How is the population of insects and microbes controlled in stored food grains ?
- (i) (ii)
- (b) How does fumigation differ from spraying ?
-
-
49. How is ethylene dibromide (EDB) used in storage to control grain pests ?
-
-
50. (a) How can the population of rodents be controlled in large godowns ?
-
- (b) What is a bait ?
-
- (c) What materials do you require at home to make bait ?
- (i)..... (ii)..... (iii)..... (iv).....
- (d) What measure do you take to check rodents at home ?
-
51. What precautions should the farmer take in storing, using and disposing pesticides ?
- (a).....
- (b).....
- (c).....
- (d).....
- (e).....
52. (a) What is food processing ?
-
-

(b) What are its advantages?

(i).....

(ii).....

(c) What are its disadvantages?

.....

.....

53. (a) Name four elementary methods of food processing.

(i) (ii) (iii) (iv)

(b) Name four modern food processing technologies.

(i) (ii) (iii) (iv)

(c) Name four food items which are processed on a commercial scale.

(i) (ii) (iii) (iv)

54. Name the place/places where the following food processing technologies originally developed ?

(a) Salting and smoking of fish (b) Curd fermentation

(c) Wine from grapes (d) Pasteurization

(e) Irradiation (f) Roller-milled flour

55. What are the advantages of food preservation ?

(a) (b)

(c) (d)

56. State two principles of preservation of fruits and vegetables.

(a).....

(b).....

57. (a) What is a 'bactericidal method' of food preservation ?

.....

.....

(b) Name two such methods: (i).....(ii).....

58. (a) What is meant by 'Bacteriostatic method' of food preservation?

(b) Name three such methods : (i)..... (ii)..... (iii).....

59. (a) How does dehydration help in food preservation ?

(b) Name five foods that are preserved by this technique.

(i)..... (ii)..... (iii)..... (iv)..... (v).....

60. (a) What is smoking ?

(b) How is this process carried out ?

(c) Name two food products which are dehydrated by smoking.

(i)..... (ii).....

61. (a) How do salts and sugar help in preservation of fruits and vegetables ?

(b) List five fruits and vegetables that are preserved by salting ;

(i)..... (ii)..... (iii)..... (iv)..... (v).....

(c) Name five fruits that are preserved in sugar :

(i)..... (ii)..... (iii)..... (iv)..... (vi).....

62. (a) Name two chemicals which are used as food preservatives.

(i) (ii)

(b) Which preservative do you suggest for preserving colourless fruits ?
.....

63. Name three fruits which are generally used for the preparation of :
(b) Name three such methods

(a) Pickles (b) Jam

(c) Jelly (d) Squash

64. Name five 'wasteful practices' adopted in your home which cause considerable amount of loss to food materials/food nutrients.

(a)

(b)

(c)

(d)

(e)

65. What measures should we take to prevent wastage of food at home ?
(f) How is this process controlled?

(a) (b)

(c) (d)

(e) (f)

66. Over-cooking results in loss of certain nutrients. Justify the statement
.....
.....

OBJECTIVE TYPE QUESTIONS

67. Fill in the blanks :

(a) are first fixed in planning for food.

(b) Weather elements includes , and

(c) and have high moisture content.

(d) Enzymes are most active between to °C.

(e) The bacteria causes food poisoning in humans.

- (f) The grains in bulk are stored in
- (g) are used for controlling pests.
- (h) Ethylene dibromide and Aluminium phosphide are
- (i) Husking, threshing and milling are the basic methods of food
- (j) The technology of irradiation first developed in
68. Indicate if the following statements are true or false ?
- (a) Harvesting marks the end of the agricultural practices. ()
- (b) Food grains intended for storage contain 14% moisture. ()
- (c) High moisture and temperature accelerate the growth of moulds. ()
- (d) Lead containers are ideal for packaging fruits and vegetables. ()
- (e) Weevils and grain borer damage stored food grains. ()
- (f) Enzymes are carbohydrates and act as biocatalyst. ()
- (g) Perishable food materials is generally stored in bags. ()
- (h) Malathion and Pyrethrum are fumigants. ()
- (i) Thiamine, Niacin and Vitamin E get lost during milling. ()
- (j) Dehydration means removal of water.

69. Match the items of Column I with those of Column II.

Column-I

- (a) Pickle
(b) Jam
(c) Jelly
(d) Squash
(e) Ketchup

Column-II

- Tomato
Orange
Apple
Guava
Lemon
Grapes

MULTIPLE CHOICE QUESTIONS

Tick mark the correct answer :

70. For safe storage the moisture content of food grains should be :
(a) 14 % (b) 18 % (c) 20 % (d) Above 20 %
71. The keeping quality of potato is greatly reduced by :
(a) Rough handling (b) Excessive drying (c) Bruises (d) All

72. The microbes and enzymes are most active between the temperature range of ($^{\circ}\text{C}$):
 (a) 10–20 (b) 20–30 (c) 30–40 (d) 40–50
73. Which one of the following is a stored grain pest ?
 (a) Weevil (b) Grain borer (c) Flour beetle (d) All
74. One of the following is a non-perishable food material :
 (a) Apple (b) Wheat (c) Guava (d) Tomato
75. Meat and fowl are usually stored between the temperature range of ($^{\circ}\text{C}$)
 (a) 0–3 (b) 3–8 (c) 7–10 (d) None
76. One of the following is not a fumigant :
 (a) Ethylene dibromide (b) Aluminium phosphide (c) Celphos (d) Rogor
77. Which one of the following nutrient is lost during milling operation ?
 (a) Thiamine (b) Niacin (c) Pantothenic acid (d) All
78. Bacteriostatic methods of food preservation includes :
 (a) Dehydration (b) Salting (c) Picking (d) All
79. Which one of the following is preserved by smoking method ?
 (a) Meat (b) Eggs (c) Cheese (d) Apple

□ □

HEALTH FOR ALL

1. Explain what do you understand by the terms 'health' and 'disease'.

.....

.....

.....

2. (a) Name three dimensions of health.

(i)..... (ii)..... (iii).....

- (b) How do they influence each other ?

.....

.....

3. (a) What is an unhealthy environment ?

.....

.....

- (b) How does it affect public health ?

.....

.....

4. (a) What is personal hygiene?

.....

.....

- (b) State any six ways to maintain personal cleanliness.

(i)..... (ii).....

(iii)..... (iv).....

(v)..... (vi).....

5. (a) What is public hygiene ?

(b) How is public hygiene important for healthy living ?

6. What steps do you suggest to keep your environment clean?

- (a).....
- (b).....
- (c).....
- (d).....
- (e).....

7. What steps do you propose to keep an individual in a state of good health ?

- (a).....
- (b).....
- (c).....
- (d).....
- (e).....

8. Explain briefly the importance of the following in preservation and promotion of health.

(a) Proper diet

(b) Regular exercise

(c) Clean food

.....

.....

(d) Rest and recreation

.....

.....

9. Why are the following activities harmful to man ?

(a) Over eating

.....

(b) Smoking

.....

(c) Not taking sufficient physical exercise

.....

.....

(d) Growing nails and nibbling them

.....

.....

(e) Drinking alcohol

.....

.....

10. What advice on personal hygiene would you give to a community where cases of typhoid, cholera and dysentery are being reported ?

.....

11. Why is it unsafe to eat food at common places where the food articles are not kept covered ?

.....

12. What tips on personal hygiene would you give on the care of :

(a) Mouth

.....

(b) Nose

.....

(c) Teeth

.....

(d) Skin

.....

13. What is the importance of a clean, filtered, disinfected water supply to a town ?

.....

.....

14. (a) What causes water pollution ?

.....

(b) What are the ill-effects of pollutants on water ?

.....

(c) What are the ill-effects of water pollution on human health ?

.....

.....

15. (a) What causes air pollution ?

.....

(b) What are the ill-effects of air pollution ?

.....

.....

- (c) What measures do you suggest to prevent air pollution ?
- (i).....
- (ii).....
16. What measures do you suggest to ensure community health ?
- (a)..... (b).....
- (c)..... (d).....
17. Why are the disposal of refuse and sewage important ?
-
18. What suggestions would you offer to check air and water pollution in your locality ?
- (a).....
- (b).....
- (c).....
- (d).....
19. What are the effects of smoking and chewing tobacco on the health of a person ?
-
-
20. Name six factors which influence human health.
- (a)..... (b).....
- (c)..... (d).....
- (e)..... (f).....
21. (a) What are metabolic diseases ?
-
-
- (b) What are the causes of these diseases ?
-

22. List three extrinsic factors which cause diseases in humans.

(a) (b) (c)

23. What extrinsic factors are considered as emergencies ?

(a) (b) (c)

24. (a) What is meant by nutritional disease ?

.....
(b) What are the main causes of nutritional diseases in India ?

(i) (ii)

(iii) (iv)

(c) Name four nutritional diseases and their causes.

(i) (ii)

(iii) (iv)

25. (a) What is obesity ?

.....
(b) What causes obesity ?

(i) (ii)

(c) How can it be prevented ?

(i)

(ii)

26. (a) How do disease causing micro-organism enter our body ?

(i) (ii) (iii) (iv)

(b) What are communicable diseases ?

27. Name three diseases caused by ;

(a) **Bacteria**

(b) Virus

(c) Protozoans

28. Name two human diseases which spread through :

(a) Air (b) Water and food

(c) Contact (d) Vectors

29. (a) How do houseflies spread disease causing germs ?

.....

.....

(b) What preventive measures do you suggest against flies ?

(i) (ii)

30. Name four groups of micro-organisms that cause diseases in humans.

(a) (b) (c) (d)

31. In what ways can you help to prevent the spread of mosquito borne diseases ?

(a) (b)

(c) (d)

32. List four main methods for the control of human diseases caused by microbes.

(a)

(b)

(c)

(d)

33. (a) What do you understand by 'food poisoning' ?

.....

.....

(b) Name three bacteria which causes food poisoning in humans.

(i) (ii) (iii)

34. (a) What is botulism ?

.....
(b) Name the causative agent of this disorder

(c) How can this pathogen be destroyed ?
.....

35. (a) How does infection by the Salmonella bacteria spread ?
.....

(b) What are the indications of the presence of this bacteria in human intestine ?
.....

36. (a) Name the fungus that produce Aflatoxin ?

(b) On what food substances does this fungus grow ?

(c) Which human organ is damaged by aflatoxin ?

37. (a) Name two intestinal bacteria of the human body.

(i).....

(ii).....

(b) What role do they play in the intestine ?
.....

38. Name atleast five protective measures against infection which human body have ?

(a)..... (b)..... (c)..... (d)..... (e).....

39. Name the disease caused by the following :

(a) Hookworm (b) Filarial worm

(c) Plasmodium (d) Leishmania

40. (a) Name the disease caused by Wuchereria worm

(b) What are the common symptoms of this ailment ?
.....

(c) Why is this disease common in Orissa, Kerala and other coastal areas ?

.....

(d) In what way is the female Culex mosquito associated with this disease ?

.....

41. (a) What is an antibiotic ?

.....

.....

(b) Name four most commonly used antibiotics.

(i)..... (ii)..... (iii)..... (iv).....

42. (a) What is the importance of vaccination programme ?

.....

(b) Name four human diseases against which vaccination is effective.

(i)..... (ii)..... (iii)..... (iv).....

43. Name the causative agent of the following diseases :

(a) Taeniasis (b) Amoebiasis

(c) Ascariasis (d) Elephantiasis

(e) Kala-azar (f) Malaria

44. Name two bacterial diseases which spread through sexual contact.

(a)..... (b).....

45. Name some organs of the body whose failure to function properly give rise to organic diseases.

(a)..... (b)..... (c)..... (d).....

46. What are the factors responsible for the malfunctioning of an organ in the body ?

(a)..... (b).....

47. (a) Why do certain cells continue to divide indefinitely to form malignant tissue ?

.....

(b) What do you call to this disease ?

(c) What are the main causes of this disease ?
.....
.....

48. (a) What is a genetic disease ?
.....
.....

(b) Name two genetic diseases :

(i)..... (ii).....

49. What are the symptoms of the following genetic diseases ?

(a) Haemophilia
.....
.....

(b) Sickle cell anaemia
.....
.....
.....

50. (a) What is a hormone ?
.....
.....

(b) Name two hormonal diseases.

(i)..... (b).....

51. (a) What is cancer ?
.....
.....

(b) How is cancer produced ?
.....
.....

(c) What is the relation between cancer and tumour ?
.....
.....

.....
52. What is the effect of :

(a) Increased activity of pituitary gland
.....

(b) Decreased activity of pituitary gland
.....

(c) Increased activity of Thyroid gland
.....

(d) Decreased activity of Thyroid gland
.....

53. What are the symptoms of the following hormonal diseases ?

(a) Cretinism
.....

(b) Diabetes
.....

54. (a) What disease is caused due to deficiency of Insulin in the body ?
.....

(b) How can this disorder be prevented ?
.....

55. (a) What is allergy ?
.....
.....

(b) What are allergens ?
.....
.....

(c) What are the common symptoms of allergy ?

.....
.....
(d) Name a disease caused by an allergic reaction

(e) How can you prevent allergies ?

.....
.....
56. (a) Define immunity.

.....
.....
(b) Name four factors which weaken the natural defences of the body to fight infections.

(i)..... (ii)..... (iii)..... (iv)

57. (a) What are Immuno-deficiency diseases ?

.....
.....
(b) What is the main cause of this disorder ?

.....
58. (a) What is AIDS?

.....
(b) Name the causative agent of AIDS

(c) How is AIDS virus transmitted from individual to individual ?

(i)..... (ii)

(d) What are the symptoms of this disease ?

(e) How to prevent AIDS ?

(i)..... (ii).....

59. How can unregulated disposal of human, domestic and industrial waste pollute water sources ?

.....

.....

60. (a) What are occupational diseases ?

.....

.....

(b) Name three diseases of this group.

(i)..... (ii)..... (iii).....

61. What chemical pollutants cause the following diseases ?

(a) Silicosis(b) Asbestosis

(c) Pneumoconiosis(d) Minamata

62. List some of the symptoms which are commonly found among the persons exposed to smoke and other gaseous pollutants.

.....

.....

63. Why is the use of DDT pesticide have been banned by some advanced countries of the world ?

.....

.....

64. Give examples of two incidents of large scale pollution.

(a).....

(b).....

65. In the light of Bhopal Gas tragedy what precautions would you suggest while setting up a chemical industry ?

(a).....

(b).....

(c).....

66. (a) What is meant by the term 'Radiation' ?

.....

.....

(b) Name two types of radiations emitted by the sun.

(i).....

(ii).....

67. (a) What is nuclear waste ?

.....

.....

(b) How is nuclear waste a source of pollution ?

.....

.....

68. Workers in atomic power stations take unusual precautions to protect themselves from exposure to neutron radiations but are not much worried about alpha and beta particles. Why ?

.....

.....

69. What are the effects of nuclear radiations on our body ?

.....

.....

70. (a) What are man-made radiations ?

.....

.....

(b) Give one example and source of these radiations.

.....

71. How can you save yourself from radiations emitted by your TV set ?
.....
72. What are the precautions and safeguards you will suggest against the nuclear wastes ?
(a).....
(b).....
(c).....
73. What was the impact of Atom Bomb which was dropped on the innocent inhabitants of Hiroshima during the Second World War?
.....
.....
74. Why are children and pregnant women not allowed to enter a nuclear reactor building ?
.....
.....
75. All of us are continuously exposed to radiations but their effect is not immediately felt. Why?
.....
.....
76. (a) What are Psychotropic drugs ?
.....
- (b) Name three habit forming substances.
(i)..... (ii)..... (iii).....
77. Why is alcohol consumption considered harmful ?
.....
.....
78. Alcohol consumption increases our reaction time. Explain.
.....

79. Name three narcotic drugs.

(a)..... (b)..... (c).....

80. (a) What are the adverse effects of narcotics on addicts ?

(b) Why is the narcotic drugs habit so dangerous?

81. Why is drug addiction becoming common in young people ?

82. Suggest some measures to discourage drug addiction in India.

83. How does education help in keeping good health ?

84. What role do 'Community Health Centres' play in India ?

85. Name the country in which the mortality rate of children is :

(a) Highest (b) Lowest

86. State four major causes of children diseases in India.

- (a)..... (b).....
(c)..... (d).....

87. How can dehydration in children be prevented ?

.....
.....

88. How can children diseases be prevented by educating the parents?

- (a).....
(b).....
(c).....

89. Suggest four ways by which you can prevent the incidence of communicable diseases.

- (a)..... (b).....
(c)..... (d).....

90. What role do poverty and education play in keeping good health ?

.....
.....
.....

OBJECTIVE TYPE QUESTIONS

91. Fill in the blanks :

- (a) diseases are readily transmitted from person to person.
(b) DPT vaccine prevents, and
(c) Most children diseases can be prevented by
(d) The natural defences of the body to fight infection is called
(e) Heroin and Cocaine are..... drugs.

- (f) and are genetic diseases.
- (g) Veneral diseases such as and are transmitted through
- (h) AIDS is the abbreviation of
- (i) Allergy is a reaction of the body to some chemical and physical agent.
- (j) The disease is characterised by an uncontrolled growth of cells in an organ.

92. Are the following statements true or false ?

- (a) Diarrhoea is the leading cause of infant mortality in India. ()
- (b) Nicotine is both a stimulant and a poison.
- (c) Alcohol affects neuro-muscular control and judgement. ()
- (d) Radiation damage to body cells is irreversible. ()
- (e) Asthma is an allergic disease. ()
- (f) Botulism is caused by the Salmonella bacteria. ()
- (g) BCG vaccine prevents three diseases. ()
- (h) Culex mosquito transmit Filarial worms. ()
- (i) Haemophilia is a genetic disease. ()
- (j) Malfunctioning of Thyroid gland causes Cretinism.

93. Match the items of Column I with those of Column II

Column I

Column II

- (a) Giardiasis
(b) Minamata
(c) Tetanus
(d) Bronchitis
(e) Cancer

- Bacteria
Smoke
Asbestos
Mercury
Protozoa
Radiation

94. Provide technical terms for each of the following statements :

- (a) Stimulating substance present in tobacco
- (b) The substances which are very highly addictive

- (c) The natural defences of the body to fight infections
- (d) A disease in which the patient's blood does not clot
- (e) A food poisoning caused by Clostridium bacteria

MULTIPLE CHOICE QUESTIONS :

Tick mark the correct answer :

95. AIDS is caused by a :
 (a) Virus (b) Bacteria (c) Protozoa (d) Fungi
96. Tobacco smoke causes :
 (a) Bronchitis (b) Lung cancer (c) Typhoid (d) None
97. A nuclear reactor explosion occurred at :
 (a) Chernobyl (b) Tarapore (c) Kalpakkam (d) Trombay
98. One of the following diseases is caused by fungus :
 (a) Measles (b) Leprosy (c) Ringworm (d) Cancer
99. Which one of the following is not a protozoan disease ?
 (a) Malaria (b) Kala-azar (c) Rabies (d) Giardiasis
100. One of the following is an occupational disease :
 (a) Tetanus (b) Cholera (c) Silicosis (d) Botulism
101. Which one of the following is transmitted through sexual contact :
 (a) Minamata (b) Gonorrhoea (c) Goitre (d) Cholera
102. The mortality rate of children under five per thousand live birth in India is :
 (a) 47 (b) 154 (c) 170 (d) 202
103. One of the leading cause of infant mortality in India is :
 (a) Tetanus (b) Diarrhoea (c) Pneumonia (d) Malnutrition
104. DPT vaccine is effective against :
 (a) Diphtheria (b) Pertusis (c) Tetanus (d) All

□ □

UNIT 8

THE UNIVERSE

1. (a) What is universe ?

.....

.....

- (b) Name any five constituents of the universe.

(i)..... (ii)..... (iii)..... (iv)..... (v).....

2. (a) What is the solar system ?

.....

- (b) Write down the names of the nine planets in order of their average distance from the sun :

(i)..... (ii)..... (iii)..... (iv)..... (v).....

(vi)..... (vii)..... (viii)..... (ix).....

3. (a) What are planets ?

.....

.....

- (b) What is the total number of planets known to you?

- (c) Is earth a star or a planet ?

4. (a) What is a galaxy?

.....

- (b) To which galaxy does our solar system belong ?

5. Name the planet which is :

(a) Farthest from the sun (b) Nearest to the sun

(c) Nearest to the earth (d) Farthest from the earth

- (e) Biggest in size (f) Smallest in size
6. A galaxy is a group of stars, so is a constellation. What is the difference between the two ?
.....
.....
7. (a) Who are known as astronomers?
.....
- (b) What is astronomy ?
.....
8. (a) How many galaxies are present in our universe ?
- (b) How many stars does each galaxy contains ?
9. (a) What is the total number of stars in our universe ?
- (b) Which instrument can help you to see more stars ?
10. (a) Is the space between stars empty ?
- (b) What is present in the dark regions between the stars ?
.....
11. What elements are contained in the dust of the stars ?
.....
12. How many seconds are there in a year ?
13. Name two units which are used to measure astronomical lengths or distances :
(a)..... (b).....
14. (a) What is a light year ?
.....
.....
- (b) What is its value in Kilometres ?

15. Why is the distance between stars expressed in light years and not in kilometres ?

.....

.....

16. The sun is 8.3 light minutes from the earth. What does this statement mean ?

.....

.....

17. (a) The Alpha Centauri is about 4.3 light years from the sun. What does this statement mean ?

.....

.....

(b) Express the distance in kilometres.

.....

.....

18. What is the speed of light in kilometres per second ?

19. (a) What is a parsec ?

.....

.....

(b) What is the relationship between parsec and light year?

.....

.....

20. (a) What are the two most common shapes of galaxies ?

(i)..... (ii).....

(b) What is the shape of our galaxy ?

21. (a) What is a constellation ?

.....

.....

(b) Name any three constellations :

(i)..... (ii)..... (iii).....

22. Which constellation is visible in :

(a) Winter (b) Summer

23. Why are some constellations seen only during certain seasons ?

.....
.....

24. (a) What is the Pole star ?

.....
.....

(b) Where is it located in the sky ?

(c) Why is it called sailor's star ?

.....

25. Name the constellation that resembles with :

(a) A large ladle (b) A scorpion

26. (a) What is a star ?

.....
.....

(b) Name four factors on the basis of which stars are classified.

(i)..... (ii)..... (iii)..... (iv).....

27. How much time does light take to reach the earth from the sun ?

.....

28. In which part of the sky and at what time of the year are the following constellations seen :

(a) The scorpio (b) The Great bear

(c) The pole star (d) The orion

29. What are the gases from which a star begins to be formed ?

.....

30. How is protostar formed ?

.....

.....

.....

31. (a) What happens when the protostar begins to contract ?

.....

.....

(b) What temperature does it finally attain ?

32. (a) What is a nuclear fusion reaction ?

.....

.....

(b) At what temperature does it take place in a star ?

(c) What happens to the protostar after fusion reaction ?

.....

.....

33. Why do stars glow and shine ?

.....

.....

34. Name two opposing forces which remain in equilibrium in a star.

(a)

(b)

35. (a) When was sun formed ?

.....

(b) How long do you think the sun will continue to radiate energy ?

.....

36. (a) What is known as the red Giant phase in the star's life ?

.....

.....

(b) What is the colour of the star in this phase ?

37. On what factors does the future of a star depends after reaching the red giant phase ?

.....

.....

38. What will happen to the star after red Giant phase if its mass is equal to that of the sun ?

.....

.....

39. When does a star becomes white dwarf star ?

.....

.....

40. What will happen to the star after red Giant phase if its mass is greater than the sun ?

.....

.....

41. Under what conditions a star would explode with a brilliant flash ?

.....

.....

42. (a) What do you call to an exploding star ?

(b) What happens when a star explodes ?

.....

.....

43. (a) What is a supernova ?

.....

(b) How many supernova explosions have been recorded so far ?

44. In which year the following astronomers observed supernova explosions.

(a) Tycho Brahe (b) J. Kepler (c) I. Shelton

45. How are supernova explosions useful to scientists ?

.....

.....

46. In what manner can the life of a star come to an end ?

.....

.....

.....

47. (a) How is star born ?

.....

.....

.....

(b) How it matures ?

.....

.....

(c) How its life comes to an end?

.....

.....

48. Explain in brief the process of the formation of the solar system.

.....

.....

.....

.....

49. (a) What is an asteroid ?

.....

.....

(b) Where are they present in the solar system ?

.....

50. How do we know the age of the solar system ?

.....

.....

51. (a) What is radioactivity ?

.....

.....

(b) How is this phenomenon useful to a scientist ?

.....

(c) Name three radioactive elements.

(i)..... (ii)..... (iii).....

52. (a) What is a meteor ?

.....

.....

(b) What do we call a meteor which falls on the earth ?

(c) How are meteorites dated ?

.....

53. (a) What are planetesimals ?

.....

.....

(b) Name three elements whose compounds are present in it.

(i)..... (ii)..... (iii).....

54. Name three major layers of the earth which was obtained by differentiation process :

(a)..... (b)..... (c).....

55. What are the characteristics of the outer core of the earth ?

.....
.....

56. Write a brief note on the middle mantle of the earth.

.....
.....

57. Mention two characteristics of the core of the earth.

(a).....

(b).....

58. Explain briefly the process of the formation of the earth.

.....
.....
.....
.....

59. Name two indirect methods employed by scientists to study the composition of the earth.

(a) (b)

60. What informations do meteorites provide to a scientist ?

.....

61. What makes the earth a special planet?

.....
.....

62. Give reasons for the absence of life on the following planets :

- (a) Mercury.....
- (b) Venus.....
- (c) Mars

63. What is the evidence for the hypothesis that the universe was very small in the distant past ?

.....
.....

64. What is known as the 'Big Bang' event in the formation of the universe ?

.....
.....
.....

65. What is the time of the birth of our universe ?

OBJECTIVE TYPE QUESTIONS

66. Fill in the blanks :

- (a) A group of stars is called a
- (b) There are stars in our universe.
- (c) Astronomical distances are measured in or
- (d) An exploding star is known as
- (e) The latest supernova explosion was observed on 24th Feb,
- (f) The solar family consists of planets.
- (g) and are radioactive elements.
- (h) is a biologically dead planet.
- (i) One galaxy contains stars.
- (j) The shapes of the galaxies may be or

67. Are the following statements true or false ?

- (a) The sun is our nearest star. ()
- (b) Constellation Orion helps to locate the pole star. ()
- (c) Earth is the largest planet of the solar system. ()
- (d) Meteorites are small meteors. ()
- (e) One parsec is equal to 3.26 light years. ()
- (f) Scorpio constellation is visible during winter. ()
- (g) Physical characteristics of a star change with time. ()
- (h) Protostar clouds have a temperature of -173°C ()
- (i) Sun was formed around 4600 million years ago. ()
- (j) All galaxies are stationary. ()

68. Match the items of Column I with those of Column II.

Column I

Column II

- | | |
|---|-----------|
| (a) A group of stars | Star |
| (b) A planet of the sun | Pluto |
| (c) The planet farthest from sun | Mars |
| (d) Biologically dead planet | Saturn |
| (e) Heavenly body having light of its own | Galaxy |
| | Meteorite |

MULTIPLE CHOICE QUESTIONS

Tick mark the correct answer :

- 69. One of the following planet is biggest in size :
(a) Earth (b) Jupiter (c) Mercury (d) Venus
- 70. One of the following planet is closest to the sun :
(a) Earth (b) Mercury (c) Venus (d) Jupiter
- 71. A group of stars arranged in beautiful patterns is known as :
(a) Galaxy (b) Constellation (c) Satellite (d) Meteor
- 72. The number of days required by Mercury to complete one orbit round the sun is :
(a) 88 (b) 225 (c) 365 (d) 687
- 73. Each galaxy contains one of the following number of stars :
(a) 10 millions (b) 10^{10} millions (c) 10^{11} millions (d) 3×10^{10} millions

74. The unit for measuring astronomical distances is :
(a) Light year (b) Parsec (c) Both (d) None
75. One of the following is not a constellation :
(a) Orion (b) Great bear (c) Asteroid (d) Scorpio
76. The first supernova explosion was observed in the year :
(a) 1006 AD (b) 1054 AD (c) 1572 (d) None
77. One of the following is biologically dead planet :
(a) Jupiter (b) Mars (c) Earth (d) Venus
78. We study about composition of earth from the data of :
(a) Earthquakes (b) Meteorites (c) Surface rocks (d) All



UNIT 9

THE EARTH SYSTEM

1. (a) What is the biosphere ?

.....

.....

(b) Name three components of the biosphere.

(i)..... (ii) (iii)

2. In what way is earth a unique planet in our universe ?

.....

.....

3. What is the evidence for the hypothesis that the earth during its formation has undergone the process of differentiation ?

.....

.....

4. Why is Mars planet considered as 'Geologically inactive' -dead ?

.....

.....

5. Name a planet other than the earth which :

(a) Got differentiated

(b) Did not differentiated at all

6. State two factors which are responsible for the origin of life on the planet Earth.

(a).....

(b).....

7. Describe in brief the evolution of the atmosphere.

.....

.....

.....

.....

8. (a) What gases were present in the primitive atmosphere ?.....

(b) What happened to these later on ?

.....

.....

9. How are the oceans formed ?

.....

.....

.....

10. How did first living organism come into existence?

.....

.....

.....

.....

11. What evidence would you give for the absence of oxygen in the early atmosphere ?

.....

.....

12. (a) What is lithosphere ?

.....

.....

(b) To what depth does the lithosphere extend ?

.....

13. (a) What do you understand by the term Earth's surface ?

.....

(b) What percentage of the earth's surface is covered by water ?

.....

14. (a) What is a continent ?

.....

(b) How many continents are there in all on the Earth? Name them.

.....

.....

15. (a) What is the contribution of Alfred Wegener ?

.....

(b) What is the meaning of the term 'Pangea' ?

.....

16. At what rate are the continents drifting every year ?

.....

17. (a) What is mantle ?

.....

(b) Where is it present ?

(c) What does it contain ?

18. (a) What is magma ?

.....

(b) What kind of rock do magma form on solidification ?

(c) How is Deccan Plateau formed ?

.....

19. (a) What is a volcano ?

.....

.....

(b) Where are they formed ?

.....

(c) When do volcano explode ?

.....

.....

20. (a) How does an earthquake occur ?

.....

.....

(b) How do we measure the intensity of an earthquake ?

.....

21. (a) What is a Richter scale ?

.....

(b) State one application of it

(c) Why is it called the Richter scale ?

.....

22. What can you conclude if the Richter scale measure

(a) 3.....

(b) 8 or more

23. Name two destructive phenomenon occurring in the earth atmosphere.

(a)

(b)

24. What is the importance of lithosphere to mankind ?

(a)

(b)

25. (a) What is meant by a wholesome environment ?

.....

.....
(b) What is a resource ?
.....

26. Name two fossil fuels.

(a)..... (b).....

27. (a) How was coal formed ?

.....
.....
.....

(b) What happen to the regions from where it is being extracted on a large scale ?

.....
.....

28. (a) What is atmosphere ?

.....
.....

(b) To what height does the atmosphere extend ?.....

29. (a) Name the major components of the atmosphere.

.....

(b) Name two :

(i) Variable components of air

(ii) Non-variable components of air

30. What is the percentage of the following constituents in the atmosphere ?

(a) Nitrogen (b) Oxygen

(c) Argon (d) Carbon dioxide

(e) Neon (f) Helium

31. (a) What is ozone ?

(b) How is it formed in the atmosphere ?

(c) At what height is ozone found ?

(d) What is the importance of ozone in the atmosphere ?

32. Combustion is the surest test of the presence of oxygen. Justify the statement.

33. How will you show the presence of water vapours in the atmosphere ?

34. How will you detect the presence of carbon dioxide in the atmosphere ?

35. What is the importance of carbon dioxide in nature ?

36. Name two major :

(a) Consumers of CO_2 in nature

(b) Producers of CO_2 in nature

37. How does photosynthesis remove carbon dioxide from the atmosphere ?

38. How does respiration add CO_2 to the atmosphere? .

39. How is CO_2 - O_2 balance maintained in nature?

40. Diagrammatically explain the oxygen cycle.

41. Draw a neat and well labelled diagram of the CO_2 cycle.

42. (a) How does CO_2 absorb infra red radiation reflected from the earth?

(b) In what way is this process harmful ?

.....

.....

43. (a) What is Greenhouse effect ?

.....

.....

(b) What is the main contributory factor for the Greenhouse effect ?

.....

44. How the phenomena of Greenhouse effect can be observed inside a car ?

.....

.....

.....

45. (a) What is meant by Greenhouse gases ?

.....

(b) Name two Greenhouse gases. (i)..... (ii).....

46. Why do water vapours and Ozone do not contribute much to the Greenhouse effect ?

.....

.....

47. List five human activities which have disturbed the ecological balance in nature.

(a).....

(b).....

(c).....

(d).....

(e).....

48. Why has the concentration of CO_2 in the atmosphere been steadily increasing year after year ?

.....

.....

.....

49. Name six air pollutants and their origin.

(a) (b)

(c) (d)

(e) (f)

50. How much CO_2 is being added every year into the atmosphere by :

(a) Burning of fossil fuels (b) Cultivation of soil

51. What measures do you suggest to prevent the Greenhouse effect ?

(a)

(b)

(c)

52. (a) What is the Ozone hole ?

.....

.....

(b) What is the single cause for the hole in the ozone layer ?

.....

(c) What is the importance of the ozone layer ?

.....

.....

53. (a) What is an ocean ?

.....

(b) How many oceans are there in all on the earth ?

.....

54. Name five oceans of the world.

- (a)..... (b)..... (c).....
(d)..... (e).....

55. Name the

- (a) Largest ocean (b) Deepest ocean
(c) Ocean around the pole (d) Ocean named after our country

56. Which is the most important ocean from the point of commerce ?

.....

57. (a) Why is sea water salty ?

.....

.....

(b) Name four elements whose salts are present in sea water.

- (i)..... (ii)..... (iii)..... (iv).....

58. How do oceans help in regulating the temperature of our earth ?

.....

.....

.....

59. (a) What are ocean currents ?

.....

.....

(b) Draw a neat labelled diagram to show the movement of ocean currents.

60. What is the normal temperature difference between any two points in the ocean ?

61. How will you justify that the oceans are a reservoir of resources ?

62. Name three metals which form nodules on the ocean bed.

(i) (ii) (iii)

63. How can you compare the earth with an engine ?

OBJECTIVE TYPE QUESTIONS

64. Fill in the blanks :

(a) The earth got differentiated into three layers namely (i)
(ii) and (iii)

(b) The is the outer layer of the earth.

(c) The molten mass of rocks and gases is called

(d) on solidification forms Igneous rocks.

(e) scale is used to measure the intensity of earthquakes.

(f) and are the fixed components of the atmosphere.

(g) Amount of and particles decreases as we go up in the atmosphere.

(h) Ozone contains atoms of oxygen.

(i) Heating caused due to trapped radiation is called the

(j) An exposure to ultraviolet rays can cause

65. Indicate if the following statements are true or false ?

(a) The planet Mars is geologically inactive. ()

- (b) The earth is a dynamic planet. ()
- (c) Volcanoes are absent on Mars. ()
- (d) Continents do not drift at all. ()
- (e) The value 2 on the Richter scale indicate lot of destruction. ()
- (f) The hydrosphere is the repository of fossil fuels. ()
- (g) CO_2 turns lime water milky. ()
- (h) Green plants and ocean consume major part of the atmospheric oxygen. ()
- (i) CO_2 and N_2O are Greenhouse gases. ()
- (j) All the oceans of the world are connected with one another ()

66. Match the items of Column I with those of Column II.

Column I

- (a) Magma
- (b) Nitrous oxide
- (c) Deepest ocean
- (d) Ultraviolet rays
- (e) Helium

Column II

- Pacific Ocean
- Indian Ocean
- Skin cancer
- Greenhouse effect
- Igneous rocks
- Rare gas

MULTIPLE CHOICE QUESTIONS

Tick mark the correct answer :

- 67. One of the following is not a rare gas :
 (a) Argon (b) Neon (c) Methane (d) Krypton
- 68. Atmosphere contains no water vapours at a height of :
 (a) 5 Kms. (b) 7 Kms. (c) 9 Kms. (d) 11 Kms.
- 69. The biosphere consists of one of the following :
 (a) Lithosphere (b) Hydrosphere (c) Atmosphere (d) All
- 70. The outermost layer of the earth is called :
 (a) Crust (b) Mantle (c) Core (d) None
- 71. Core of the earth is in :
 (a) Liquid state (b) Solid state (c) Gaseous state (d) Gaseous and liquid state
- 72. The most busiest ocean of the world is :
 (a) The Pacific Ocean (b) The Atlantic Ocean (c) The Arctic Ocean (d) The Indian Ocean

73. The most abundant constituent of air is :

- (a) N_2 (b) O_2 (c) CO_2 (d) Ar

74. One of the following is a Greenhouse gas :

- (a) CO_2 (b) N_2O (c) O_3 (d) All

75. The main cause of Greenhouse effect is :

- (a) Use of fossil fuels (b) Greater agricultural activity (c) Deforestation (d) All

76. The Greenhouse effect will increase the average temperature of the earth by :

- (a) $1^\circ F$ (b) $2^\circ F$ (c) $1^\circ C$ (d) $2^\circ C$



UNIT 10

METALS AND NON-METALS

1. What are metals ? Illustrate your answer with two examples.

.....

.....

2. What are non-metals ? Explain your answer with two examples.

.....

.....

3. (a) How many metals were known to ancient people ?.....

(b) How many metals were included by Mendeleev in his periodic table ?

.....

(c) How many metals are known to us today ?

4. State six physical properties of metals.

(a) (b)

(c) (d)

(e) (f)

5. Mention five properties which distinguish metals from non-metals.

Metals

Non-Metals

(a)

(b)

(c)

(d)

(e)

6. Name the property of metals by virtue of which they can be :

- (a) Beaten into thin sheets
(b) Drawn into thin wires

7. Name two metals which are :

- (a) Soft (b) Hard.....
(c) Both malleable and ductile (d) Good conductor of heat and electricity

8. Where will you look for the following in the periodic table ?

- (a) Metals (b) Non-metals

9. What is the main difference in the electronic configurations of a metal and a non-metal ?

.....
.....

10. (a) What do you understand by the term 'superconductivity' ?

.....
.....

(b) How many metals have been found to display this property ?.....

11. (a) What do you call to the temperature at which a metal becomes superconductor ?

.....

(b) Name three superconductors (i) (ii) (iii)

(c) What are the transition temperatures of the following metals ?

(i) Zinc (b) Lead..... (c) Vanadium

12. Write the names of two chemical properties exhibited by metals only.

(a).....

(b).....

13. (a) What type of oxides are formed by :

(i) Metals (ii) Non-metals

(b) What type of chlorides are formed by :

(i) Metals (ii) Non-metals.....

(c) What type of hydrides are formed by :

(i) Metals..... (ii) Non-metals.....

14. Give two examples of :

(a) Acidic oxides (b) Basic oxides

15. (a) What is an 'Activity series of metals' ?

.....
.....

(b) Why is hydrogen included in the reactivity series of metals ?

.....
.....

(c) How are metals arranged in the activity series of metals ?

.....

16. (a) Arrange the following metals in the decreasing order of reactivities : Ba, Cu, K, Fe, Ni, Mg, Pt.

.....

(b) Arrange the following metals in increasing order of reactivities : Hg, Fe, Mg, Cu, Na, Zn, K

.....

17. The reactivity series of metals is given below : K, Na, Ba, Ca, Mg, Al, Zn, Fe, Sn, Pb, H, Cu, Hg, Ag, Au, Pt.

(a) Which metal is most reactive ?

(b) Which metal is least reactive ?.....

(c) Which metals are less reactive than hydrogen ?

(d) Which metals are more reactive than aluminium ?

(e) Which metals are more reactive than Barium ?

18. (a) How do metals occur in nature ?

(b) Why do most of the metals occur in combined state ?

19. Name three metals which occur in the :

(a) Native state (b) Combined state

20. (a) What is an ore ?

(b) How is an ore different from a mineral ?

(c) Which metal is most abundant in the earth's crust ?

21. (a) Where are minerals found ?

(b) How are minerals formed ?

22. What do you understand by the term 'Metallurgy' ?

23. Name three principal steps which are used in the extraction of metals from their ores.

(a).....

(b).....

(c).....

24. (a) What is meant by the term 'Concentration of an ore'?

.....

.....

(b) Name the different methods by which ores can be concentrated.

(i)..... (ii)..... (iii).....

25. (a) What is Hydraulic washing ?

.....

.....

(b) On what principle is it based ?

.....

.....

(c) Name one metal which is concentrated by this method

26. (a) What is Froth floatation process ?

.....

.....

(b) What is it used for ?

.....

(c) On what principle is this process based ?

.....

(d) Name two metals which are concentrated by this process.

(i)..... (ii).....

27. (a) When is electromagnetic separation process used ?

.....

.....
(b) Name one metal which is concentrated by using electromagnets

28. Explain in brief the Bayer method of obtaining pure aluminium oxide from Bauxite ore.

.....
.....
.....
.....

29. What is Gangue or Matrix ?

.....

30. (a) What do we mean by the term 'Roasting of an ore' ?

.....
.....

(b) What type of ores are roasted ?.....

31. (a) What is calcination ?

.....
.....

(b) What type of ores are calcined ?

32. (a) What is the difference between roasting and calcination ?

.....
.....

(b) Which one is used for:

(i) Carbonates ores (ii) Sulphide ores.....

33. Name the process which can be used to convert

(a) A carbonate ore into metal oxide

(b) A sulphide ore into metal oxide

34. Show with the help of equations how:

(a) Roasting can convert a sulphide ore to metal oxide.

(b) Calcination can convert a carbonate ore to metal oxide.

35. (a) Which method is used for obtaining free metals from their oxides.

(b) What is reduction ?

(c) What is the importance of carbon in metallurgical processes ?

36. Name one metal each which is produced :

(a) By the reduction of its oxide with carbon

(b) By the reduction of its oxide with aluminium

(c) By the electrolysis of its molten oxide

(d) By the electrolysis of its fused chlorides

37. Name the three processes which are most commonly used for the refining of metals

(a) (b) (c)

38. (a) What do we mean by 'Refining of metals' ?

(b) Name a process which is used for this purpose

(c) Name five metals which are refined electrolytically.

(i) (ii) (iii) (iv) (v)

39. Draw a labelled diagram of the apparatus used in the electrolytic refining of impure copper. Write equations of the reaction taking place at the cathode and the anode.

.....

.....

.....

.....

40. Impure copper metal is to be refined electrolytically. Name the

(a) Anode (b) Cathode (c) Electrolyte

41. (a) Some metals can be refined by melting crude metals and keeping it on a sloping hearth. What is the name of this method ?

.....

(b) Name three metals which are refined by this process.

(i) (ii) (iii)

42. (a) Why is the demand for high purity metals increasing day by day ?

.....

.....

(b) Name three sectors which use high purity metals.

(i) (ii) (iii)

(c) Name two methods which are used to obtain metals of high purity.

(i)..... (ii).....

(d) Name the process by which Titanium and Germanium are refined.

(i)..... (ii).....

43. Name one metal which is refined by :

(a) Distillation (b) Liquation.....

(c) Oxidative refining (c) Zone refining

(e) Thermal decomposition (f) Electrolysis

44. Give the names and formulae of two ores of :

(a) Copper

(b) Iron

(a) Aluminium

45. Name the places where copper deposits are found in India.

.....

46. List the steps to be taken for obtaining a pure sample of copper from copper sulphide.

(a) (b).....

(c) (d).....

47. Describe briefly how impure copper is refined electrolytically.

.....

.....

.....

.....

48. (a) What is blister copper ?

.....

.....

(b) Why is it so named ?

49. (a) Name three Indian states which have rich deposits of iron.

(i)..... (ii)..... (iii).....

(b) Where are the main iron producing plants located in India ?

(i)..... (ii)..... (iii)..... (iv).....

50. In producing pig iron a mixture of iron ore, coke and lime stone is fed into a blast furnace. Answer the following questions :

(a) Draw a neat and labelled diagram of the blast furnace :

(b) Why is coke added ?

(c) What happens to coke in the furnace ?

(d) What happens to lime stone in the furnace ?

(e) How is iron ore converted to iron ?

(f) State the main reactions which occur in the furnace. Write chemical equations.

(i) At the bottom of the furnace

(ii) At the centre of the furnace

(iii) At the top of the furnace

(g) What is the production capacity of a single blast furnace ?

(h) How long a blast furnace can function after its start?

51. In the extraction of iron from haematite (Fe_2O_3):

(a) Which substance acts as flux

(b) Which substance forms slag

(c) What is slag chemically

(d) Is slag lighter or heavier than iron ?

(e) List two uses of slag :

(i)

(ii)

52. (a) Which of the following is the main reducing agent in the reduction of iron oxide to iron in the blast furnace ? Carbon or Carbon monoxide.

(b) How is it produced in the blast furnace ?

53. What is the difference between 'Flux' and 'Slag' ?

54. (a) What is the main ore of aluminium in India ?.....

(b) When and by whom was it discovered ?

(c) What is the contribution of Heroult of France and Hall of America ?

.....

55. (a) What is Bauxite ?

.....

(b) Which metal is extracted from it ?

(c) What is its chemical formula ?

56. (a) Name the process by which aluminium is extracted from Alumina.

.....

(b) What is the role of Cryolite in the electrolysis of alumina ?

.....

.....

(c) Describe with a neat labelled diagram the Hall's process of the extraction of aluminium from Alumina.

.....

.....

.....

.....

57. Name six metals and write one use of each.

(a)

(b)

(c)

(d)

(e)

(f)

58. Name two metals each which are used for :

- (a) Making utensils (b) Transmission wires
(c) Atomic energy (d) Making jewellery
(e) Decorating sweets (f) Making alloys

59. (a) Why is Titanium called as a strategic element ?

- (i) (ii)

(b) Name four sectors which are using Titanium on large scale.

- (i) (ii) (iii) (iv)

60. (a) What would happen when aluminium is heated with Fe_2O_3 ?

(b) Write the chemical equation of the reaction.

(c) Which process is used to weld two broken pieces of rails ?

61. (a) What is an alloy ?

(b) Why are alloys preferred in comparison to pure metals ?

(i)

(ii)

62. Name the constituents and uses of the following alloys :

S.No.	Name of the alloy	Constituents	Uses
(a)	Steel		
(b)	Stainless steel		
(c)	Brass		
(d)	Bronze		

S.No.	Name of the alloy	Constituents	Uses
(e)	Solder		
(f)	German silver		
(g)	Duralium		
(h)	Alnico		

62. (a) What is the chemical formula of common salt ?.....

(b) How is it obtained ?

(c) Why does it absorb moisture from air ?

(d) Name three useful compounds which are made from sodium chloride

(i)..... (ii)..... (iii).....

(e) State two uses of common salt.

(i).....

(ii).....

64. (a) What is the chemical formula of washing soda ?.....

(b) What is the difference between soda ash and washing soda ?

.....

(c) State two properties of washing soda.

(i)..... (ii).....

(d) State two important uses of washing soda.

(i)..... (ii).....

(e) Name three useful compounds which are made from Na_2CO_3

(i)..... (ii)..... (iii).....

65. (a) What is the meaning of the term 'Efflorescence' ?

.....

.....

- (b) Name one compound which effloresces ?
66. (a) What is the chemical formula of baking soda ?
- (b) What are the constituents of baking powder ?
- (c) What happens when baking soda is strongly heated ?
.....
.....
- (d) State two uses of baking soda.
(i)..... (ii).....
67. Write the chemical formula of :
(a) Slaked lime (b) Quick lime
(c) Bleaching powder (d) Plaster of Paris
68. (a) What substance is heated to obtain quick lime on large scale
(b) What should be added to quick lime to get slaked lime
(c) What is the difference between quick lime and slaked lime ?
.....
.....
- (d) State two uses of quick lime :
(i)..... (ii).....
69. (a) what is bleaching powder chemically ?
- (b) How is bleaching powder manufactured ?
.....
.....
- (c) Give three uses of bleaching powder :
(i).....
(ii).....

(iii).....

70. (a) What is Plaster of Paris ?

.....

(b) How is it prepared ?

.....

.....

(c) Which property of Plaster of Paris is utilized in making casts for statues ?

.....

(d) State two important uses of it :

(i).....

(ii).....

71. What vital role do some of the metals play in our body ?

.....

.....

.....

72. (a) Name the diseases which is caused by the excess of :

(i) Iron in the body (ii) Copper in the body

(b) What are the common symptoms of Wilson's disease ?

.....

73. (a) How many non-metals are known to us.?.....

(b) How many of them are in :

(i) Solid state (ii) Gaseous state (iii) Liquid state

74. Name the following :

(a) Three gaseous non-metals

(b) Three solid non-metals

(c) A liquid non-metal

- (d) A soft non-metal
- (e) The hardest non-metal
- (f) A lustrous non-metal
- (g) A non-metal which is a good conductor
- (h) A non-metal which has high melting point

75. (a) What is the position of non-metals in the periodic table?

(b) Why do non-metals form covalent compounds with chlorine ?

(c) What is the type of linkage in oxides of non-metals ?

(d) Do non-metals replace hydrogen from acids ?

76. Name four non-metals which are found in the earth's crust. Arrange them in order of their abundance.

77. (a) Which is the most common and wide spread non-metal element in the earth ?

(b) Why is this element never found in free state in nature ?

78. (a) What is the chemical symbol of silicon ?

(b) Name four different forms in which silicon do exist

(i)..... (ii)..... (iii)..... (iv).....

79. (a) What is the atomic number of silicon ?

(b) What is the arrangement of electrons in it ?.....

(c) How many valence electrons are there in silicon ?.....

(d) Discuss the position of silicon in the periodic table.

.....

80. (a) How is silicon obtained on a commercial scale ?

.....

.....

(b) List four physical properties of silicon.

(i) (ii)

(iii) (iv)

(c) Write chemical equations for the reaction that takes place when silicon react with :

(i) Oxygen

(ii) Chlorine

(iii) Hydrochloric acid

(iv) Warm solution of sodium hydroxide

(d) State three important uses of silicon :

(i)

(ii)

(iii)

81. (a) Why phosphorus does not occur in nature in the free state?

.....

(b) How is phosphorus prepared ?

.....

.....

82. (a) What is the atomic number and mass number of phosphorus.

.....

(b) What is its electronic configuration ?

(c) How many valence electrons are there in phosphorus ?

(d) What is the position of phosphorus in the periodic table ?
.....

(e) What are the valencies of phosphorus ?

83. (a) What do you understand by the term 'allotropy' ?
.....
.....

(b) Name two elements which show allotropy ?

(i) (ii)

84. (a) Name the two allotropes of phosphorus. (i) (ii)

(b) Which one is more reactive and why ?
.....

85. Mention four differences between yellow phosphorus and red phosphorus.

White Phosphorus

Red Phosphorus

(a).....

(a).....

(b).....

(b).....

(c).....

(c).....

(d).....

(d).....

86. (a) What is phosphorescence ?
.....
.....

(b) Which allotrope of phosphorus shows this property ?

(c) Why is white phosphorus kept under water ?
.....

87. Give equations of the reaction that takes place when phosphorus reacts with :

- (a) Oxygen
- (b) Chlorine
- (c) Potassium hydroxide

88. (a) Name the gas formed when yellow phosphorus is warmed with NaOH solution

(b) Give equation of the reaction.

89. (a) Why is phosphorus important for the plants ?

.....
.....

(b) Name a phosphatic fertilizer

(c) How is this fertilizer made ?
.....

90. State two uses of phosphorus.

- (a).....
- (b).....

91. (a) How does sulphur occur in nature ?

.....
.....

(b) What is its colour and state at room temperature ?

(c) Name three minerals containing sulphur.

(i) (ii) (iii)

92. (a) What is the atomic number and mass number of sulphur ?

(b) What is its electronic configuration

(c) What is the number of valence electrons in sulphur ?

(d) What is the position of sulphur in the periodic table ?

.....

(e) What is its valency ?

(f) What is the atomicity of sulphur ?

93. (a) With which element is the Frash process associated ?

(b) How is sulphur obtained by the Frash process ?

.....

.....

.....

94. Write equations of the reaction that takes place when S reacts with :

(a) Carbon

(b) Iron

(c) Concentrated sulphuric acid

(d) Concentrated Nitric acid

95. List four important uses of sulphur.

(a)..... (b).....

(c)..... (d).....

96. (a) What is vulcanisation of rubber ?

.....

.....

(b) Why is it done ?

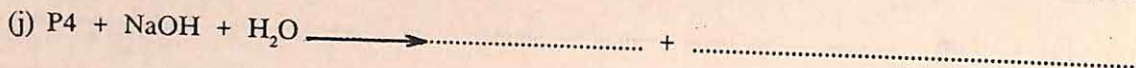
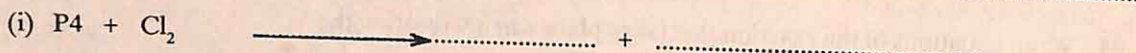
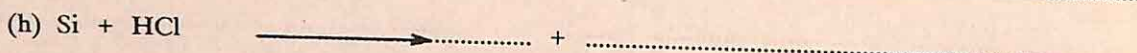
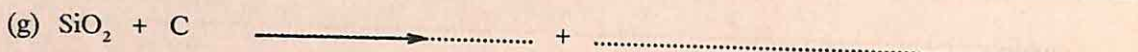
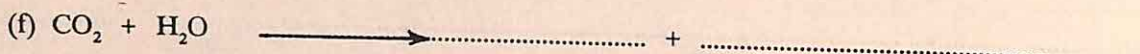
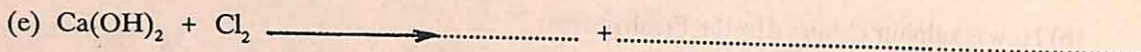
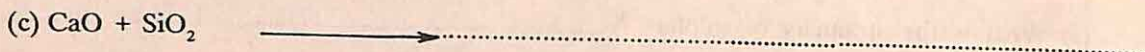
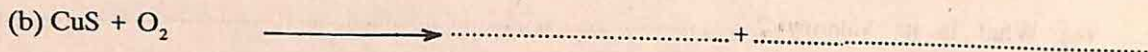
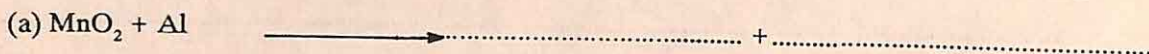
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97. Why do people take bath in spring waters containing traces of sulphur ?

.....

.....

98. Complete and balance the following chemical equations :



99. What is the effect of heat on sulphur ?

.....
.....

100. What happens when :

(a) Steam is passed over hot silicon.

.....

(b) Ore Cinnabar is roasted in a furnace.

.....

(c) Sulphur is mixed with hot concentrated nitric acid.

.....

(d) Yellow phosphorus reacts with chlorine.

.....

(e) Chlorine is passed through slaked lime

.....

OBJECTIVE TYPE QUESTIONS

101. Fill in the blanks :

- (a) The chemical formula of bleaching powder is
- (b) $(\text{CaSO}_4)_2 \cdot \text{H}_2\text{O}$ is called
- (c) Solder is an alloy of and
- (d) Froth floatation process is used to concentrateores.
- (e) is the best conductor of heat.
- (f) Quick lime is obtained by heating
- (g) Metals formoxides where as non-metals formoxides.
- (h) is the most abundant non-metal in the earth's crust.
- (i) Heating of an ore in the absence of air is called
- (j) During electrolysis metals are liberated at

102. Indicate if the following statements are true or false ?

- (a) Yellow phosphorus is kept in water. ()
- (b) Impure copper is refined by oxidation method. ()
- (c) Titanium is called as strategic metal. ()
- (d) Washing soda is a deliquescent substance. ()
- (e) Common salt absorb moisture from air. ()
- (f) Hall's process is associated with copper. ()
- (g) Sulphur is used as Fungicide.()
- (h) Aluminium was discovered by Oersted in 1825. ()
- (i) Phosphine is a noxious gas. ()
- (j) Duralium alloy is used for aircrafts. ()

103. Provide scientific terms for each of the following statements :

- (a) Heating an ore in the absence of air

- (b) Heating an ore in the presence of air
- (c) Unwanted impurities in an ore
- (d) Loss of electrical resistance by a metal.....
- (e) The minerals from which metals are extracted profitably

104. Match the items of Column I with those of Column II

Column-I

- (a) Bankingsoda
- (b) Quick lime
- (c) Slaked lime
- (d) Lime stone
- (e) Bleaching powder

Column-II

- Ca(OH)_2
- CaCO_2
- CaOCl_2
- CaO
- NaHCO_3
- $(\text{CaSO}_4)_2 \cdot \text{H}_2\text{O}$

MULTIPLE CHOICE QUESTIONS (Tick mark the correct answer)

- 105. Brass is an alloy of copper and
 - (a) Zinc (b) Tin (c) Carbon (d) Aluminium
- 106. Heating an ore in the absence of air is called
 - (a) Calcination (b) Roasting (c) Reduction (d) Distillation
- 107. One of the following metal is refined by Zone refining technique
 - (a) Germanium (b) Titanium (c) Vanadium (d) Niobium
- 108. Which one of the following metal is best conductor :
 - (a) Cu (b) Al (c) Ag (d) Zn
- 109. One of the following non-metal is most abundant in the earth's crust :
 - (a) Si (b) S (c) P (d) C
- 110. One of the following metal is purified by liquation method :
 - (a) Tin (b) Bismuth (c) Lead (d) All
- 111. The aluminium metal was discovered by :
 - (a) Hall (b) Heroult (c) Oersted (d) Bayer.
- 112. Titanium is strategic element because it has
 - (a) High strength (b) High melting point (c) Resist corrosion (d) All
- 113. One of the following alloy is used for aircraft :
 - (a) Brass (b) Bronze (c) Duralium (d) Alnico
- 114. One of the following element in excess causes Wilson's disease.
 - (a) Na (b) Fe (c) Cu (d) Ca

UNIT 11

CARBON AND ITS COMPOUNDS

1. (a) How does carbon occur in nature ?
.....
.....
(b) What kind of bond joins the carbon atom to other atoms ?
2. (a) Name five substances of our daily use which contains carbon.
(i)..... (ii)..... (iii)..... (iv)..... (v).....
(b) Name four naturally occurring substances which contain carbon.
(i)..... (ii)..... (iii)..... (iv).....
3. (a) Why does the element carbon form a large number of compounds in comparison to other elements?
.....
.....
(b) What is the name of the property of carbon due to which its atoms link with one another to form long chains ?
- (b) In what way is carbon chemically unique ?
.....
.....
4. (a) Which element is most widely distributed in nature ?
- (b) What is the atomic and mass number of carbon ?
- (c) Write the electronic arrangement in a carbon atom
- (d) In what period and group of the periodic table is carbon placed ?
.....
- (e) Why is carbon placed in Group IV of the periodic table ?

(f) How many valence electrons does carbon contain?

(g) What other elements are present in Group IV of the periodic table

(h) What is the valency of carbon ?

(i) What do you mean by tetravalency of carbon ?

(j) Which elements are present on the left and right sides of carbon in the periodic table?

5. (a) What is allotropy?

(b) Name two allotropes of carbon. (i)..... (ii).....

(c) Name two elements other than carbon which exhibit allotropy.

(i)..... (ii).....

6. (a) How will you show that diamond and graphite are chemically identical and consist only of carbon atoms?

(b) Which gas is obtained when diamond and graphite are strongly heated ?

7. Mention five properties of diamond and graphite in which they differ from each other.

Diamond

(a).....

(b).....

(c).....

Graphite

(a).....

(b).....

(c).....

(e)..... (f).....

8. Give two important differences between the structure of diamond and graphite.

Diamond

Graphite

(a)..... (a).....

(b)..... (b).....

9. Draw the structure of diamond and graphite.

Diamond

Graphite

10. In what part of India are the following allotropes of carbon found ?

(a) Diamond

(b) Graphite

11. (a) State three important uses of diamond.

(i).....

(ii).....

(iii).....

(b) State three important uses of graphite.

(i).....

(ii).....

(iii).....

12. Give reasons for the following :

(a) Diamond is the hardest known substance.

(b) Diamond is non-conductor of electricity.

(c) Graphite is used as a lubricant.

(d) Graphite is good conductor of electricity.

(e) Diamond is less reactive than graphite.

13. (a) Which property of diamond makes it suitable for :

(i) Making drilling equipments

(ii) Making jewellery

(b) Which property of graphite makes it suitable for :

(i) Making electrodes of dry cells

(ii) Making crucibles for melting metals

14. A piece of black electrode used in dry cell on strong heating in air gave a colourless gas which turned lime water milky. What was the material of the electrode ?

15. (a) What is the source rock of diamond ?

(b) Where was the famous Koh-e-Noor diamond found?

(c) Where and when were first diamonds found in India ?

(d) Which country is the largest producer of natural diamonds in the world ?

(e) How are natural diamonds formed ?

(f) How can diamonds be obtained from graphite ?

16. Which property of diamond makes it suitable for making :

(a) High precision thermometers

(b) Protective windows for space probes.....

(c) A fine tool for removing cataract from eyes

17. (a) What are hydrocarbons ? Give two examples.

(b) What is the natural source of hydrocarbons ?

(b) Name the simplest compound of carbon and hydrogen.

18. (a) Describe and draw the three dimensional structure of methane.

(b) What is its shape ?

(c) What is the angle between the various carbon-hydrogen bonds in methane ?

19. Write down the molecular, electronic and structural formulae of:

(a) Methane

(b) Ethane

(c) Ethene

(d) Ethyne

20. (a) Where is methane found in nature ?

.....
.....

(b) Why is methane also known as Marsh gas ?

.....

21. How is methane prepared in the laboratory ? Draw the apparatus to be used for the laboratory preparation of methane. Give equation of the reaction involved.

.....
.....
.....
.....

22. (a) What is soda lime ?

(b) Which method is used for the collection of methane ?

(c) State four physical properties of methane.

(i)..... (ii)..... (iii)..... (iv).....

23. (a) State two important uses of methane.

(i).....

(ii).....

(b) Why is methane used as a fuel ?

.....

(c) Is methane a greenhouse gas ? If so explain.

.....

.....

24. (a) What do you understand by the term 'Homologous series' ?

.....

.....

(b) State three characteristics of a homologous series.

(i).....

(ii).....

(iii).....

(c) What is the difference in the

(i) Molecular formulae of any two adjacent homologues ?

(ii) Molecular mass of any two adjacent homologues ?

25. (a) Write down the general formula for the homologous series of :

(i) Alkanes (ii) Alkenes (iii) Alkynes

(b) Write down the names and the formulae of the first four homologues of

(i) Alkanes

(ii) Alkenes

(iii) Alkynes

26. Classify the following hydrocarbons as alkanes, alkenes and alkynes :



(a) Alkanes (b) Alkenes (c) Alkynes

27. Write the names of each of the following hydrocarbons :

(a) CH_4 (b) C_3H_6 (c) C_4H_{10}

(d) C_2H_6 (e) C_4H_8 (f) C_2H_2

(g) C_2H_4 (h) C_5H_8 (i) C_3H_4

28. (a) How does methane react with chlorine ? Explain with an example.

.....

(b) What do you call to such reactions ?

29. How do alkanes burn in :

(a) Sufficient supply of air

.....

(b) Insufficient supply of air

.....

30. Complete the following table :

Name	Molecular Formula	Melting Point ($^{\circ}C$)	Boiling Point ($^{\circ}C$)	State	Molecular Mass
Methane					
Ethane					
Propane					
Butane					
Pentane					
Hexane					

31. (a) What do you call to the compounds which have same molecular formula but different structural formula.....

(b) What do you understand by Isomerism ? Illustrate with an example.

32. (a) What should be the minimum number of carbon atoms in an alkane to show chain isomerism ?

(b) How many isomers of the molecular formula C_4H_{10} possible ?

(c) Write the names and structural formulae of different isomers of butane.

(d) What is the main difference in n-butane and iso-butane ?

33. (a) How many isomers of the molecular formula C_5H_{12} are possible ?

(b) Write the names and structural formulae of all the isomers of pentane.

34. What is the general names of the hydrocarbons containing :

- (a) Single covalent bonds.....
- (b) Double covalent bonds
- (c) Triple covalent bonds

35. (a) What are saturated hydrocarbons ?

.....
.....

(b) By what other names are they known ?

(c) Give four examples of saturated hydrocarbons.

(i)..... (ii)..... (iii)..... (iv).....

36. (a) What are unsaturated hydrocarbons ?

.....
.....

(b) Name two groups of unsaturated hydrocarbons.

(i)..... (ii).....

(c) What is the main source of these hydrocarbons ?

37. (a) What is meant by the term 'cracking' ?

.....
.....

(b) What type of hydrocarbons are obtained during cracking ?

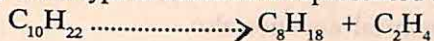
.....

(c) Why do cracking produce atleast one hydrocarbon with a double bond ?

.....
.....

(d) What is the difference between thermal cracking and catalytic cracking ?

(e) What type of reaction is represented by the following equation ?



38. State four physical properties of ethylene (C_2H_4).

(a)..... (b).....

(c)..... (d).....

39. (a) What is meant by a substitution reaction ?

(b) What type of hydrocarbons show this type of reaction ?

(c) Is the reaction of methane with chlorine a substitution reaction ?

40. (a) Why do ethene and ethyne burn in oxygen with a sooty flame ?

(b) Write balanced chemical equations for these reactions :

(i).....

(ii).....

41. (a) What are addition reactions :

(b) What type of hydrocarbons show these reactions ?

(c) Give one example of a addition reaction.

42. What happens to the colour of :

(a) Bromine water when ethylene is passed through it ?

(b) Alkaline KMnO_4 solution when ethyne gas is passed through it ?

43. (a) How does ethylene react with bromine ? Write chemical equation also.

.....
.....

(b) How does ethene react with HCl . Write chemical equation also.

.....
.....

44. Explain why ethylene and acetylene decolorise bromine water where as ethane does not ?

.....
.....

45. Mention two tests to distinguish between saturated and unsaturated hydrocarbons.

(a).....

(b).....

46. (a) How is vanaspati ghee obtained from vegetable oils ?

.....
.....

(b) What type of chemical reaction takes place in this conversion ?

.....

47. (a) Name the process in which several molecules of the same substance add up to form a large molecule.

.....

(b) What is meant by polymerisation ? Illustrate by taking an example.

.....
.....

48. State two uses of each of the following hydrocarbons ;

- (a) Ethylene (i)
(ii)
(b) Acetylene (i)
(ii)

49. Which hydrocarbon is used :

- (a) For illumination (b) For artificial ripening of fruits.....
(c) For the welding of metals (d) For preparing carbon black

50. Here is a list of few hydrocarbons : C_2H_4 , C_2H_6 , C_2H_2 , C_3H_8 , C_3H_6 , C_4H_{10} . Answer the following questions:

- (a) Which will decolorise bromine water ?
(b) Which will give addition reaction ?
(c) Which will undergo polymerisation ?
(d) Which one belongs to alkyne series ?
(e) Which one contains double bonds ?

51. (a) What is petroleum ?

.....
.....
(b) How is petroleum formed in nature ?

-
.....
(c) What are the two elements present in petroleum ?
(d) Name the process used to separate the various components of petroleum.....
(e) What is a refinery ?

52. (a) Name five products obtained from petroleum.
- (i) (ii) (iii) (iv) (v)
- (b) Write the uses of the following products of petroleum.
- (i) Gas (ii) Gasoline
- (iii) Kerosene (iv) Diesel oil
- (v) Vaseline (vi) Paraffin wax
53. (a) Name three groups of compounds containing carbon, hydrogen and oxygen.
- (i) (ii) (iii)
- (b) What are alcohols ?
-
-
- (c) How are alcohols named ? Explain with an example.
-
-
- (d) What is the general formula of alcohols ?
- (e) Give two examples of alcohols. (i) (ii)
54. (a) Write down the molecular and structural formula of methanol.
-
-
- (b) What is denatured alcohol ?
-
-
- (c) State two uses of methyl alcohol.
- (i)
- (ii)

55. (a) Name the second member of the homologous series of alcohol ?
- (b) Name the process by which ethanol is prepared from molasses
- (c) Name the biochemical catalyst which bring about fermentation
- (d) What is the importance of yeast in fermentation ?
- (e) At what temperature is the process of fermentation carried out ?
56. (a) What is meant by fermentation ?
-
-
- (b) Give two examples of fermentation from everyday life.
- (i).....
- (ii).....
- (c) How is ethanol manufactured commercially ? Give equation of the reaction.
-
-
57. (a) What happens when a piece of sodium is put in ethyl alcohol ?
-
-
- (b) Write a balanced chemical equation for the combustion of ethanol.
-
58. Which product is obtained when ethanol undergoes :
- (a) Mild oxidation with cupric oxide.
-
- (b) Strong oxidation with alkaline Potassium dichromate.
-

59. How would you test the presence of an alcoholic group in an organic compound ? Give equation of the reaction taking place.

.....
.....

60. List four uses of ethyl alcohol.

(a)..... (b).....

(c)..... (d).....

61. (a) Why do we use antifreeze in automobile radiators in cold countries ?

.....
.....

(b) What does antifreeze contains ?

62. (a) Which functional group is present in an organic acid ?

(b) Draw the structure of carboxyl group

(c) How are organic acid obtained ?

.....
.....

(d) How are organic acid named ?

.....
.....

(e) Write the formula and names of the first four members of the homologous series of organic acids.

(i)..... (ii).....

(iii)..... (iv).....

63. (a) How many carbon atoms do fatty acids contains ?

(b) State two uses of organic acids.

(i)..... (ii).....

64. (a) What are esters ?

(b) How are esters formed ?

(c) What is the smell of the ester ?

(d) Mention two uses of esters.

(i)..... (ii).....

65. What happens when acetic acid is warmed with ethyl alcohol in the presence of a little concentrated sulphuric acid ? Give equation of the reaction involved.

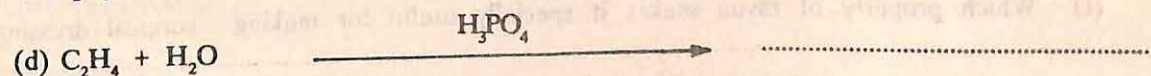
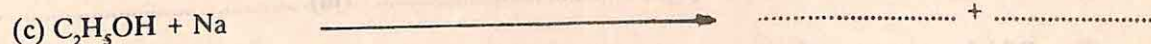
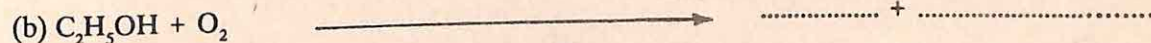
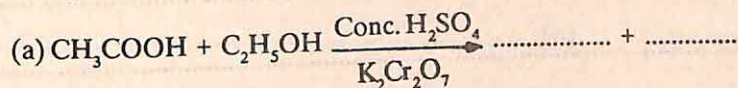
66. Name four main sources of carbon compounds.

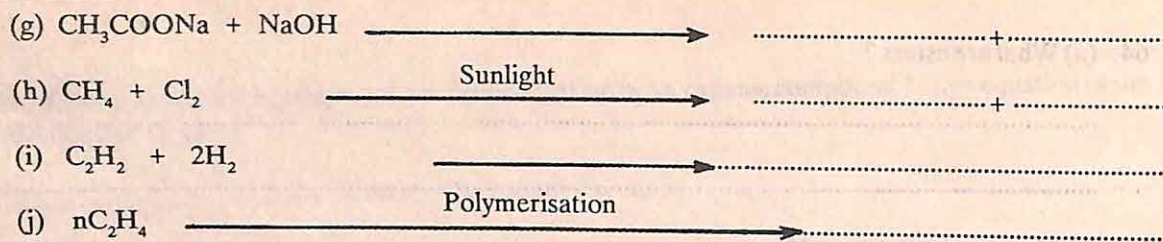
(a)..... (b)..... (c)..... (d).....

67. Name four organic compounds which are made from coal by destructive distillation.

(a)..... (b)..... (c)..... (d).....

68. Complete and balance the following chemical equations :





69. Name three :

- (a) Natural fibres
- (b) Synthetic fibres

70. Why have synthetic fibres become so popular ? Give four reasons in support of your answer.

- (a)..... (b).....
- (c)..... (d).....

71. (a) What is rayon ?

.....

.....

(b) Why is it so named ?

.....

(c) Which is the most common type of rayon in use ?

(d) How is viscose rayon prepared ?

.....

.....

.....

(e) State three important uses of rayon.

(i)..... (ii)..... (iii).....

(f) Which property of rayon makes it specially useful for making surgical dressings ?

(g) Why is rayon called a regenerated fibre ?

72. (a) What is Nylon ?

(b) Why is it so named ?

(c) When was it produced for the first time ?

(d) Why is nylon used for making climbing ropes ?

(e) State two important properties of nylon fibres.

(i)..... (ii).....

73. Why is nylon staple blended with either wool or rayon for making carpets ?

74. List three main uses of nylon.

(a)..... (b)..... (c).....

75. (a) What is polyester ?

(b) Why is it so named ?

(c) Mention two important properties of polyester.

(i)..... (ii).....

(d) State two uses of polyester.

(i)..... (ii).....

76. (a) What is a carbon fibre ?

(b) Write two important characteristics of carbon fibre.

(i)..... (ii).....

(c) State two uses of carbon fibres.

(i)..... (ii).....

77. (a) Give a brief description of the polyamide fibre.

.....
.....
.....

(b) Name two naturally occurring polyamide fibres.

(i)..... (ii).....

78. (a) What is a plastic ?

.....
.....

(b) How are different varieties of plastic made ?

.....
.....

79. (a) What are thermoplastics ?

.....
.....

(b) Give two examples of thermoplastics. (i)..... (ii).....

80. (a) What are thermosetting plastics ?

.....
.....

(b) Give two examples of thermosetting plastics. (i)..... (ii).....

(c) Why do they retain their shape after setting once ?

.....
.....

81. (a) What is natural rubber ?

.....
.....
(b) What is the unique property of natural rubber ?

(c) What is natural rubber chemically

(d) What is the monomer of natural rubber ?

(e) How many isoprene monomers are present in the polymer chain of natural rubber ?
.....

82. (a) What do you understand by 'Vulcanisation of rubber' ?

.....
.....
(b) Why is natural rubber vulcanised ?

.....
(c) Name three articles for which vulcanised rubber is used.

(i)..... (ii)..... (iii).....

83. (a) Why is carbon black added to natural rubber ?

.....
.....
(b) Name three articles which are made from hardened rubber.

(i)..... (ii)..... (iii).....

84. (a) What is neoprene ?

.....
.....
(b) How is neoprene produced ?

(c) State two important characteristics of neoprene.

(i)..... (ii).....

(d) Mention two uses of neoprene.

(i)..... (ii).....

85. (a) Why is neoprene non-inflammable ?

.....

(b) Why are conveyor belts made of neoprene used in coal mines ?

.....

86. (a) How is Thiokolrubber prepared commercially ?

.....

(b) What is the most important feature of thiokol ?

.....

(c) Name two compounds which on reacting form thiokol rubber.

(i)..... (ii).....

(d) State three uses of thiokol.

(i)..... (ii)..... (iii).....

87. Name one synthetic rubber containing :

(a) Sulphur (b) Chlorine

88. What advantage does neoprene have over natural rubber ?

.....

.....

89. (a) What is a soap ?

.....

.....

(b) Name the raw material required for the manufacture of soap.

(i)..... (ii)..... (iii).....

(c) How would you prepare a small sample of soap in the laboratory ?

.....

.....

.....

.....

90. (a) What are detergents ?

.....

.....

(b) What detergents do you use at home ? (i)..... (ii).....

91. What is the difference between soaps and synthetic detergents ?

Soaps

Detergents

(a).....	(a).....
(b).....	(b).....
(c).....	(c).....

92. Why have detergents replaced soap as a washing agent ?

(a).....

(b).....

(c).....

93. Write names and molecular formulae of three fatty acids most commonly used for making soap.

(a)..... (b)..... (c).....

94. (a) What is saponification ?

.....

(b) What is the function of common salt in the preparation of soap ?

95. Explain the cleansing action of soaps and detergents.

96. Give the chemical formula of one :

(a) Soap (b) Detergent

97. Why is soap not suitable for washing clothes when the water is hard ?

98. Which of the following is a soap and which a synthetic detergent ?

(a) $C_{12}H_{25}OSO_3Na$ (b) $C_{15}H_{31}COONa$

99. How do soaps and detergents wash away the dirt from the clothes ?

100. Why do synthetic detergents create an environmental problem ?

OBJECTIVE TYPE QUESTIONS

101. Fill in the blanks :

- (a) The polymer of chloroprene is called
- (b) Natural rubber is a polymer of
- (c) and are two synthetic fibres.
- (d) Soapless soaps are called
- (e) The allotropes of carbon are chemically
- (f) Organic compounds containing -OH group are known as
- (g) Ethylene and acetylene are hydrocarbons.
- (h) Isomers have same but different formula.
- (i) Soda lime is a solid mixture of and
- (j) Valence bonds of carbon are directed towards the four corners of a regular

102. Indicate whether the following statements are true or false :

- (a) Esters have a fruity smell. ()
- (b) Organic acids are made by oxidation of alcohols. ()
- (c) Viscose rayon is a regenerated fibre. ()
- (d) Polyester contains many ester groups. ()
- (e) Polyamide and polyester are plastics. ()
- (f) An antifreeze is a mixture of alcohol and water. ()
- (g) Terylene was the first synthetic fibre made. ()
- (h) Plastics can be moulded into various shapes while hot. ()
- (i) Detergents have a remarkable property of wetting. ()
- (j) $C_{17}H_{35}COONa$ is a synthetic detergent.

103. Provide scientific terms for each of the following statements :

- (a) A chemical change brought about by the action of enzymes

- (b) The sodium salts of fatty acids
- (c) A hydrocarbon containing double bond
- (d) Compounds of carbon and hydrogen
- (e) The fusion of large number of molecules of unsaturated hydrocarbon

104. Match the items of Column I with those of Column II

Column I

Column II

- | | |
|------------------|---------------|
| (a) Alkane | Ethanoic acid |
| (b) Alkene | Propanol |
| (c) Alkyne | Methane |
| (d) Alcohol | Ethylene |
| (e) Organic acid | Acetylene |
| | Ethanal |

MULTIPLE CHOICE QUESTIONS

105. One of the following compounds is used as an illuminant :

- (a) C_2H_2 (b) C_2H_4 (c) C_2H_6 (d) None

106. Denatured alcohol contains :

- (a) Methanol (b) Copper sulphate (c) Pyridine (d) All

107. Which one of the following groups is present in soap?

- (a) $-COOH$ (b) $-COONa$ (c) $-CHO$ (d) $-OSO_3Na$

108. Substitution is a chemical reaction characteristic of :

- (a) Alkanes (b) Alkenes (c) Alkynes (d) All

109. One of the following hydrocarbon decolorises alkaline $KMnO_4$.

- (a) Methane (b) Ethyne (c) Ethane (d) Propane

110. Sodium salts of long chain carboxylic acid is known as :

- (a) Soap (b) Ester (c) Detergent (d) Fat

111. Which of the following substance is not obtained by the fractional distillation of petroleum ?

- (a) Petrol (b) Diesel (c) Alcohol (d) Paraffin wax

112. One of the following is a regenerated fibre ?

- (a) Wool (b) Cotton (c) Rayon (d) Thiokol

113. One of the following is a thermosetting plastic ?

- (a) PVC (b) Polystyrene (c) Perspex (d) Bakelite

114. One of the following is a thermoplastic :

- (a) Bakelite (b) Formica (c) Melamine (d) Thermocole

□ □

BIOSPHERE

1. (a) What is biosphere ?

.....

- (b) Name three living components of the biosphere.

(i)..... (ii)..... (iii).....

2. (a) What is an ecosystem ?

.....

- (b) What are the two components of an ecosystem ?

(i)..... (ii).....

- (c) Name two aquatic and terrestrial ecosystems.

(i)..... (ii).....

3. (a) Name four abiotic components of an ecosystem.

(i)..... (ii)..... (iii).....

- (b) What are the biotic components of an ecosystem ?

(i)..... (ii)..... (iii).....

4. (a) What scientific term is used to designate a large ecosystem ?

- (b) What is a biome ?

.....

- (c) Name two major biomes of the earth. (i) (ii)

5. What is the difference between an ecosystem and a biome ?

.....

.....

6. Living things are organised into three groups namely population, community and ecosystem. Explain each term briefly.

(a) Population

.....

.....

(b) Community

.....

.....

(c) Ecosystem

.....

.....

7. (a) Distinguish between a population and a community.

.....

.....

(b) Distinguish between a community and an ecosystem.

.....

.....

8. Why are natural ecosystems more or less balanced systems ?

.....

.....

.....

9. Describe in brief the structure and function of biosphere.

.....

10. Explain the following terms :

(a) Lithosphere

(b) Hydrosphere

(c) Atmosphere

11. Why do we consider biosphere as a 'biological system' ?

12. Which factors determines the nature of plants and animals of a particular area ?

(a)..... (b)..... (c).....

13. Both living and non-living components of the biosphere influence each other. Explain with the help of a suitable example.

14. What factors determine primarily the climate of a particular place ?

(a) (b) (c) (d)

15. Name three categories of living organism on the basis of their mode of nutrition.

(a) (b) (c)

16. Define each of the following terms :

(a) Producers

(b) Consumers

(c) Decomposers

(d) Autotrophs

(e) Heterotrophs

17. (a) What are the major producers in this universe ?

(b) Name two most important consumers. (i) (ii)

(c) Name two decomposers. (i) (ii)

(d) What role do decomposers play in the biosphere ?

.....
.....

18. Define each of the following terms :

(a) Food chain :

.....

(b) Trophic levels

.....

.....

(c) Food web

.....

.....
19. Name two :

(a) Herbivores (b) Carnivores (c) Omnivores

20. (a) What are the two categories into which aquatic life falls ?

(i)..... (ii).....

(b) What are phytoplanktons ? Give two examples.

.....
.....

(c) What are zooplanktons ? Give two examples.

.....
.....

21. What are the various trophic levels in a food chain ?

(a)..... (b)..... (c).....

22. (a) What function does a food chain perform in the biosphere?

.....
.....

(b) What factors give dynamicity to the biosphere ?

(i)..... (ii).....

23. How does energy flow take place in the biosphere ?

.....
.....
.....
.....

24. State three salient features of energy flow in the biosphere.

(a).....

(b).....

(c).....

25. (a) What is a pyramid ?

.....
.....

(b) Explain each of the following terms :

(i) Pyramid of numbers

.....
.....

(ii) Pyramid of biomass

.....
.....

(iii) Pyramid of energy

.....
.....

26. Draw a diagram of the pyramid showing trophic structure.

27. Give one example of each of the following :

- (a) Two step food chain
- (b) Three step food chain
- (c) Four step food chain
- (d) Five step food chain

28. Give an example of a :

- (a) Aquatic food chain
- (b) Terrestrial food chain

29. If you remove all the phytoplanktons from a pond what will happen to it ?

.....
.....

30. What proportion of energy of the producer is converted into the flesh of a herbivore and that of a carnivore ?

.....
.....

31. Why is the number of trophic levels in a food chain limited to four or five?

.....
.....

32. Why are the green plants always the starting point of the food chain ?

.....
.....

33. (a) Why does a food chain limit trophic levels?

.....
.....

(b) Why is there loss of energy at each trophic level ?

.....

.....

34. A community can not survive if all its autotrophs are removed. Comment.

.....

.....

.....

35. Why is the presence of decomposers necessary for the survival of an ecosystem ?

.....

.....

36. What would happen to grassland if all the grazers are removed from there ?

.....

.....

37. A plant receives 1500 Kcal. of energy in ten days. How much energy will it be able to store ?

38. A lion eats a deer having stored 2000 Kcal of energy. How much energy

(a) Did the deer receive from the plants ?

(b) Will the lion be able to store

39. What is the difference between a grazing food chain and the decaying food chain ?

.....

.....

40. Give reasons for the decrease in net production at each trophic level.

(a).....

(b).....

41. (a) What would have happened to earth if there was no sun in the universe ?

.....

(b) How much solar energy is used up by plants during photosynthesis ?

42. What will happen to frogs if all the grasshoppers were removed from the following food chain ?

Grass → Grasshopper → Frog → Snake → Peacock.

43. Below is a chain of organisms in an ecological order. Study the chain and answer the following questions.

Plant → Aphid → Frog → Snake → Peacock.

(a) Name the producer

(b) Name a herbivore

(c) Name the primary, secondary and tertiary consumers in order :

(d) Name the carnivores

(e) Name the top carnivore

(f) Draw a pyramid from the above informations.

44. Complete the following food chains :

(a) Grass → → Man

(b) Grass → Rabbit → Fox

(c) Algae → → Man

(d) Fodder → → Man

(e) Plant → Aphid → Frog → →

45. Why we say that energy flow in the biosphere is unidirectional ?

.....

.....

.....

46. How the Food chains get shortened?

.....

.....

47. Which food chains are advantageous in terms of energy ?

.....

.....

48. What is meant by the 10% law of transfer of energy ?

.....

.....

49. How has man taken the advantageous position in the food chain ?

.....

.....

50. How has man become the most important part of his biosphere ?

.....

.....

51. Which position in the food chain will help you to get more calories from the food you eat ?

.....

.....

52. How do vegetarian food habits help us in getting more calories ?

.....

.....

53. How was famous Sahara desert formed ?

.....

.....

.....

54. How do some harmful chemicals enter our bodies through the food chain ? Explain with reference to DDT insecticides.

.....

.....

.....

.....

55. (a) What is meant by recycling of substances in the biosphere ?

.....

.....

(b) Why is cycling of substances in nature important ?

.....

.....

56. (a) What do you mean by 'Biogeochemical cycle' ?

.....

.....

(b) Name three main cycles that operates in nature.

(i)..... (ii)..... (iii).....

57. (a) What are macronutrients ? Give two examples.

.....

[illegible]

(i).....

(ii).....

(iii).....

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(c) What is the role of bacteria in carbon cycle ?

61. (a) Why is nitrogen essential for life ?

(b) How do plants and animals obtain nitrogen ?

(i) Plants

(ii) Animals

(c) Name four ways of enriching nitrogen content of the soil.

(i)

(ii)

(iii)

(iv)

62. (a) What is meant by biological fixation of nitrogen ?

(b) Name two nitrogen fixing bacteria (i) (ii)

(c) Name two green algae which can fix nitrogen in the soil.

(i)

(ii)

(d) Name two leguminous plants. (i) (ii)

(e) Name two non-leguminous plants which can fix nitrogen.

(i)

(ii)

63. (a) How is nitrogen returned to the atmosphere from the soil ?

(b) In what form is nitrogen returned to the atmosphere ?

(c) In what form do plants take up nitrogen from the soil ?

(d) What role do denitrifying bacteria play in the soil ?

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.....

64. Explain each of the following terms .

(a) Ammonification

.....

.....

(b) Nitrification

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(c) Denitrification

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65. How do thunder storm and lightning keep the soil fertility constant ?

.....

.....

.....

66. How are leguminous plants useful to farmers ?

.....

.....

67. How is atmospheric nitrogen recycled in nature ? Explain it with the help of a suitable diagram.

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68. Nitrogen cycle in the biosphere involves five steps. Name them.

(a)..... (b)..... (c).....

(d)..... (e).....

69. Why is nitrogen cycle also called as a perfect cycle ?

.....

.....

70. Arrange the followign steps of nitrogen cycle in proper sequence : Atmospheric nitrogen, nitrification, nitrogen fixation, ammonification, denitrification.

.....

71. What happens when nitrification exceeds denitrification ?

.....

.....

72. What happens if nitrogen content in rivers and lakes increases ?

.....

.....

73. What role do decomposers play in cycling of materials ?

.....

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.....
74. How do oxygen enters and leaves the body of living organisms ?

.....
.....
75. What role do organisms play in maintaining oxygen cycle?

.....
.....
76. State two important features of the biogeochemical cycles.

(a).....

(b).....

77. (a) What is ecological balance ?

.....
.....
(b) Why is it necessary to maintain an ecological balance ?

.....
.....
78. List six human activities which have disturbed the harmonious cycling of materials.

(a).....

(b).....

(c).....

(d).....

(e).....

(f).....

79. What would happen if these biogeochemical cycles become acyclic ?

OBJECTIVE TYPE QUESTIONS

80. Fill in the blanks :

- (a) Ammonium is converted to nitrites by.....bacteria.
- (b) Free floating aquatic plants are called
- (c) Producer level has calories than level.
- (d) , and are the three living components of biosphere.
- (e) Green plants use up % of the total sun's energy for
- (f) , and are macronutrients.
- (g) is an essential part of proteins and amino acids.
- (h) Nitrobacter bacteria change to in the soil.
- (i) and processes use up atmospheric oxygen.
- (j) and are the biotic components of the biosphere.

81. Are the following statements true or false ?

- (a) A food web consists of several interconnected food chains. ()
- (b) A vegetarian draw more calories from his food. ()
- (c) An ecological pyramid shows various trophic levels. ()
- (d) Plant eating animals are called carnivores. ()
- (e) Plants are consumers and animals are producers. ()
- (f) Plants are called transducers. ()
- (g) Producers play a major role in cycling of materials. ()
- (h) Nitrogen cycle is a perfect cycle. ()
- (i) Nostoc and anabaena algae help in carbon cycle. ()
- (j) The roots of legumes contain Rhizobium bacteria. ()

82. Provide scientific terms for each of the following statements :

- (a) Passively free floating organisms
- (b) A very large ecosystem
- (c) A step in a food chain
- (d) The sphere of air, water and land sustaining life
- (e) The process of converting ammonium to nitrates

83. Match the items of Column I with those of Column II

Column-I	Column-II
(a) Ammonification	Pseudomonas
(b) Nitrification	Rhizobium
(c) Denitrification	Plants
(d) Nitrogen fixation	Nitrobacter
(e) Transducers	Nitrosomonas Animals

MULTIPLE CHOICE QUESTIONS Tick mark the correct answer :

- 84. The change of nitrogen to nitrates is called :
 (a) Nitrification (b) Denitrification (c) Nitrogen fixation (d) Decay
- 85. Plants absorb nitrogen from the soil in the form of :
 (a) NH_4 (b) NO_2 (c) NO_3 (d) N_2
- 86. One of the following is a denitrifying bacteria :
 (a) Nitrosomonas (b) Nitrobacter (c) Pseudomonas (d) Rhizobium
- 87. Which of the following should be in relatively large number in an ecosystem ?
 (a) Green plants (b) Herbivores (c) Carnivores (d) Omnivores
- 88. An ecosystem consists of :
 (a) Biotic components (b) Abiotic components (c) Both (d) None
- 89. Which of the following is not a terrestrial biome ?
 (a) A forest (b) A crop field (c) A pond (d) A desert
- 90. Which of the following is not an aquatic biome ?
 (a) A pond (b) A lake (c) A forest (d) A tank

91. Which of the following is a biotic components of the biosphere ?

- (a) Air (b) Water (c) Algae (d) Soil

92. One of the following factor determine the type of organisms of a particular area ?

- (a) Soil (b) Climate (c) Water (d) All

93. Plants are known as :

- (a) Producers (b) Converters (c) Transducers (d) All

□ □

MAN AND HIS ENVIRONMENT

1. (a) What is meant by the term 'environment' ?

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.....

- (b) List four meteorological factors which govern our environment.

(i)..... (ii)..... (iii)..... (iv).....

2. List four constituents of abiotic environment.

(a)..... (b)..... (c)..... (d).....

3. (a) What do you understand by an ecological balance ?

.....

.....

- (b) Why is it necessary to maintain an ecological balance ?

.....

.....

4. State four human activities which have resulted in the ecological crisis.

(a)..... (b).....

(c)..... (d).....

5. Name four factors which have disturbed the biotic environment of man.

(a)..... (b).....

(c)..... (d).....

6. What makes the environment in cities bad ?

(a)..... (b).....

(c)..... (d).....

7. (a) What is pollution ?

(b) Name four kinds of pollutions.

(i)..... (ii)..... (iii)..... (iv).....

(c) Which pollution in your opinion is the most harmful and why ?

8. Write the Percentage composition of the atmosphere.

(a) N_2 (b) O_2 (c) CO_2 (d) Other gases ...

9. (a) What do you mean by socio-cultural environment of man ?

(b) Name four aspects of human life which are included in it.

(i)..... (ii)..... (iii)..... (iv).....

(c) What is the significance of socio-cultural environment to mankind ?

10. What type of problems has man created for himself in his environment ?

(a)..... (b).....

(c)..... (d).....

11. Name four water pollutants.

(a)..... (b)..... (c)..... (d).....

12. List four rivers of India which are being polluted by industrial wastes, garbage, sewage and town refuse.

(a)..... (b)..... (c)..... (d).....

13. (a) What is an oil slick ?

.....

.....

(b) What are the harmful effects of oil spills on the aquatic life ?

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14. Which factors are responsible for the bad taste and odour of water ?

(a) (b)

15. How will you justify that population is increasing geometrically ?

.....

.....

.....

16. In what ways has over population disturbed the ecological balance ?

.....

.....

17. How the setting up of a chemical factory upstream would affect the population down streams ?

.....

.....

.....

18. Why is the replenishment of forests necessary?

.....

.....

19. How do forests prevent soil erosion ?

.....

.....

20. How are forests, soil conservation and rainfall related to each other ?

21. (a) What are the ill effects of water pollution ?

(b) Name three diseases caused by polluted water.

(i)..... (ii)..... (iii).....

22. What methods can you suggest to reduce water pollution ?

(a).....
(b).....
(c).....

23. (a) What is algae bloom ?

(b) How is it produced ?

(c) What is its harmful effect on aquatic life ?

24. What does 'Ganga Action Plan' envisages for India ?

.....

25. (a) What is water table ?

.....

.....

(b) Under what conditions does it remain stable ?

.....

.....

26. What human activities have resulted in :

(a) Increasing the water table of an area.

.....

(b) Decreasing the water table of an area.

.....

27. How can we make the best use of underground water ?

.....

.....

28. What measures do you suggest for replenishment of ground water?

.....

.....

29. How did modern agriculture created imbalance in nature ?

(a).....

(b).....

30. (a) What do you mean by 'monoculture' ?

.....

.....

(b) In what way is monoculturing harmful to soil ?

31. (a) What is crop rotation ?

(b) What is its importance ?

(c) Which crop rotation is most commonly followed in your area ?

32. What steps do you suggest to prevent degeneration of soil and declining fertility?

(a)..... (b).....

(c)..... (d).....

33. What are the effects of over grazing on an ecosystem?

34. (a) What is nitrogen fixation ?

(b) Name two bacteria which helps in nitrogen fixation.

(i)..... (ii).....

35. (a) What are legumes ?

(b) Why should legumes be included in crop rotation ?

(c) Which bacteria do roots of legumes contain ?

36. Why should agricultural land be left uncultivated for one or two seasons ?

.....

.....

37. What is the impact of technological revolution in India ?

- (a).....
- (b).....

38. In what ways do urbanization and industrialization contribute to pollution problems ?

.....

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.....

39. What are the side effects of mining associated activities on the environment ?

.....

.....

40. Suggest two proposals which can prolong the depletion of mineral resources.

- (a).....
- (b).....

41. (a) What is air pollution ?

.....

.....

(b) Name few common air pollutants.

.....

42. (a) What is an acid rain ?

.....

.....

(b) Acidic air has damaging effect on many materials. Explain with suitable examples.

.....

.....

.....

43. List four methods to prevent and control air pollution.

- (a)..... (b).....
- (c)..... (d).....

44. (a) What is ozone layer ?

.....

(b) At what height in the atmosphere does it occur ?

45. (a) What is the function of stratospheric ozone ?

.....

.....

(b) What factors are causing depletion of the stratospheric ozone ?

(i)..... (ii).....

(c) What are its consequences ?

.....

.....

.....

46. (a) Why did population of Pelicans bird decreased in Michigan in 1942 ?

.....

(b) Why did the shells of their eggs broke even before hatching ?

.....

.....

.....

47. How do poisonous chemicals like DDT enter our body through a food chain ?

.....

.....

.....

48. In what ways technological advancement has disturbed ecological balance ?

(a).....

(b).....

49. (a) What is meant by 'Biological magnification' ?

.....

.....

(b) What is the impact of this process on human life ?

.....

.....

50. What was the effects of the Aswan Dam which was built on Nile river in Egypt ?

.....

.....

51. Why it becomes necessary to do environmental planning ?

.....

.....

52. (a) What is sericulture ?

.....

.....

(b) How is sericulture helpful in replinshing forests ?

.....

.....

53. What do we mean when we say that a particular animal has become extinct ?

.....

54. Name some birds and animals which have become extinct.

.....

55. What are the two main causes of wild life destruction ?

(a)..... (b).....

56. What steps do you propose for the conservation of wild life ?

(a)..... (b).....

(c)..... (d).....

57. What happens to ecosystem when National parks and wild life Sanctuaries are established ?

.....

.....

58. Name two organisations which are involved in the preservation and conservation of wild life in India.

(a)..... (b).....

59. How is education more useful in controlling population and pollution ?

.....

.....

.....

60. Name two :

(a) Renewable resources (b) Non-renewable resources

(c) Biodegradable wastes (d) Non-degradable wastes

61. (a) What are non-degradable waste pollutants ?

.....

.....

(b) Why are they said to be more harmful than degradable pollutants ?

.....

.....

62. What adequate legislative measures must be enforced by every Indian state to prevent pollution ?

(a).....

(b).....

63. (a) What are radioactive wastes ?

.....

.....

(b) Where are these mainly produced ?

(i)..... (ii)..... (iii).....

64. What are the precautions and safeguards you will suggest against the radioactive wastes ?

(a).....

(b).....

(c).....

(d).....

65. (a) What is meant by recycling of waste material ?

.....

.....

(b) How does recycling of waste material help in preventing pollution ?

.....

.....

66. Give two examples of recycling of biodegradable wastes.

(a).....

(b).....

67. What measures do you suggest to maintain an ecological balance in nature ?

(a)..... (b).....

(c)..... (d).....

(e)..... (f).....

68. What steps has man taken to solve the environmental problems ?

(a).....

(b).....

(c).....

69. Name two main kinds of natural resources and give one example of each.

(a).....

(b).....

70. Name two National Parks of our country.

(a)..... (b).....

71. Name two places in India where bird sanctuaries are located.

(a)..... - (b).....

72. Expand the following abbreviations :

(a) IUCN (b) WWF

OBJECTIVE TYPE QUESTIONS

73. Fill in the blanks :

(a) The porespaces in the soil are filled with and

(b) and are leguminous plants.

(c) is at the apex of most of the food chains.

(d) The Aswan Dam was built on river in.....

(e) Acid rain is harmful to and

(f) and are non-biodegradable substances.

(g) Radioactive wastes are produced in and

(h) The molecular formula of ozone is

(i) and causes water pollution.

(j) WWF is the sister organisation of

74. Are the following statements true or false ?

- (a) Biocides are non-degradable pollutants. ()
- (b) Modern agriculture has created an imbalance in nature. ()
- (c) Food production increases in geometric progression. ()
- (d) WWF is the sister organisation of IUCN. ()
- (e) Ultraviolet radiations prevent skin cancer. ()
- (f) Monoculture maintains soil fertility. ()
- (g) Fertilizers and pesticides pollute the soil. ()
- (h) Aerosols depletes the ozone layer of the atmosphere. ()
- (i) Non-renewable resources should be used sparingly. ()
- (j) Corbett National Park is located in Uttar Pradesh. ()

75. Provide scientific terms for each of the following statements :

- (a) Growing the same crop on the same field year after year
- (b) The spaces between the soil particles
- (c) The washing away of top fertile soil by water
- (d) The rearing and management of silkworm on large scale
- (e) The accumulation and concentration of harmful chemical in a food chain

76. Match the items of Column I with those of Column II

Column I

Column II

- | | |
|---------------------------|----------------------------|
| (a) Corbett National Park | Switzerland |
| (b) Bandipur Sanctuary | Giant Panda |
| (c) IUCN | Skin cancer |
| (d) WWF | Karnataka |
| (e) Ultraviolet rays | Uttar Pradesh
Rajasthan |

MULTIPLE CHOICE QUESTIONS

77. Which one of the following is the most difficult to control ?
(a) Air pollution (b) Soil pollution (c) Water pollution (d) Noise pollution
78. The Wild life Protection Act was enacted in India in the year :
(a) 1952 (b) 1962 (c) 1972 (d) 1982
79. Which of the following causes water pollution ?
(a) Sewage (b) Garbage (c) Industrial wastes (d) All
80. Which of the following is non-biodegradable waste ?
(a) Cow dung (b) Plants (c) Detergents (d) Soaps
81. The main source of radioactive source is :
(a) Nuclear reactors (b) Hospitals (c) Laboratories (d) All
82. Population is increasing :
(a) Geometrically (b) Arithmetically (c) Both (d) None
83. The main cause of depletion of ozone layer is :
(a) Aerosols (b) Carbon dioxide (c) Sulphur dioxide (d) None
84. The depletion of ozone in the atmosphere may cause :
(a) Lung cancer (b) Throat cancer (c) Skin cancer (d) Breast cancer
85. Which one of the following can fix atmospheric nitrogen in the soil ?
(a) Wheat (b) Potato (c) Peas (d) Rice
86. Which of the following is a non-renewable resource ?
(a) Water (b) Wind (c) Petroleum (d) Sun.

□ □